36 PAGE SUPPLEMENT

The best-selling Acorn magazine in the world

ACORN USER

Essential for all users of 32-bit RISC OS computers



Making movies

Oscar-winning video editing from Eidos

BETT preview

Network installations

Project management

Plus: Computing for the Family 2 supplement

The ACORN USER DISC — JANUARY 1995

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Try the new spelling software from CCS

- Clip art
- * Info utilities
- Label printing

VIRUS CHECKED

IDG MEDIA

£2.95

JANUARY 1995 ISSUE 151

ISSN 0263-7456

New Releases...

Impression Publisher Plus

A new professional edition of the best selling Impression DTP program.

This version offers enhanced colour control (named and spot colours), EPS and OPI support for professional full colour DTP work.



Publisher Plus
£299 + VAT (£351.32 inc)
Upgrade from Impression Publisher
£130 + VAT (£152.75 inc)

MacFS LIGHT

A MAC DISC READ & WRITE UTILITY FOR ACORN RISC COMPUTERS

A new cut down version of MacFS designed for use only with floppy drives - for transferring data between Acorn high density or 800K discs and Mac SuperDrive or 720K floppy discs. The original MacFS can also be used with external hard drives, Syquests and opticals.

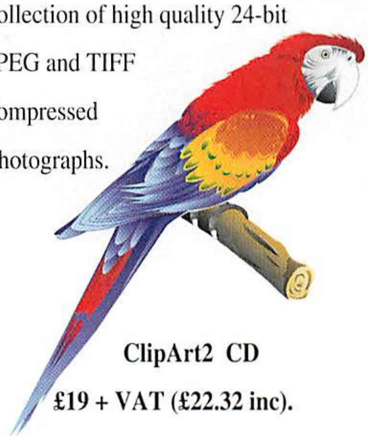
MacFS Light £49 + VAT (£57.57 inc)
MacFS £99 + VAT (£115.32 inc)

ClipArt 2 CD

The results of the second ArtWorks clip-art competition. This CD includes over 500 new clip-art examples, plus all those included in the ArtWorks package.



It also contains a new collection of high quality 24-bit JPEG and TIFF compressed photographs.



ClipArt2 CD
£19 + VAT (£22.32 inc).

EIDOSCOPE

Eidoscope is based on video editing software from Eidos (costing some £3500) which is used in many professional studios. Suitable for editing Eidos movies (created with an Eagle card) - cut and paste pieces of movies together to create your own complete Replay movie. Further details of the powerful features are available on request. Requires a Risc PC.

£169.00 + VAT (£198.57 inc).

Network Spooler

FOR TURBODRIVERS & LASERDIRECT

This package includes a copy of the TurboDriver software and network spooler software allowing any machine connected to an AUN compatible network to print to a common printer. The software also supports LaserDirect printers and includes an unlimited network site licence.

Network Spooler
£149 + VAT (£175.07 inc)

Formulix

A completely new mathematical and equation formulae editor. Outputs Drawfiles and is OLE compatible allowing it to integrate with suitable applications such as Impression Style and Publisher. Features include full undo, WYSIWYG display, matrices, drag and drop etc.

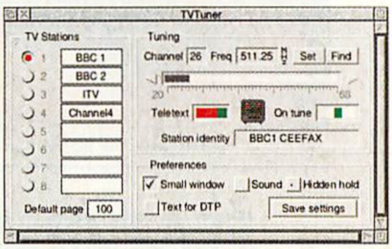


Formulix
£69 + VAT (£81.07 inc)
Upgrade for existing Equasor owners (including bundled version)
£49 + VAT (£57.58)

...For 1995

TV Tuner

An expansion card consisting of a TV Tuner module that can output composite video signal (TV can be watched either on a separate monitor, or on your computer screen via a suitable video digitiser). Optional Teletext software allows Teletext pages to be viewed on screen, and saved as text or sprites etc.



TV Tuner

£89 + £6 p&p + VAT (£111.62 inc)

TV Tuner + Teletext Software

£159 + £6 p&p + VAT (£193.87 inc)

Movie Magic

Amazing new expansion card for Risc PCs, allows full motion, full screen video with CD quality stereo sound, to be obtained from standard MPEG movie files. With a compatible CD player it can play VideoCDs to provide better than VHS quality video.

Scart RGB video output to a suitable (ie PAL frequencies) monitor. An optional upgrade (available later) allows video in a window on a Risc PC as an alternative to video out.

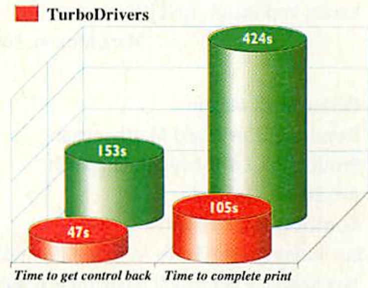


Movie Magic
£249 + £6 p&p + VAT (£299.62 inc)
Movie Magic Video in a window - available later £TBA

Version 4 RISC OS 3 Turbo Drivers

The latest version of the TurboDrivers supports Acorn !Access network software, is compatible with the Risc PC and the latest versions of !Printers.

Risc PC TurboDriver timings

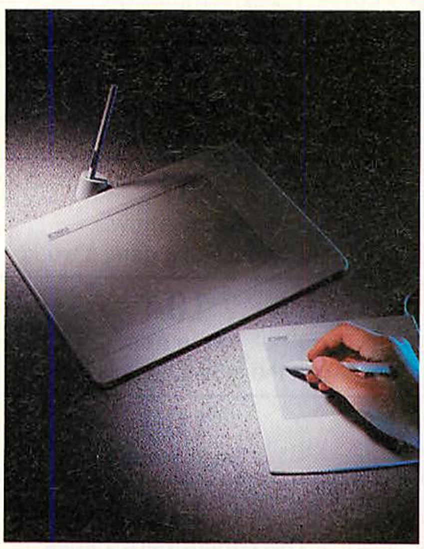


Now offers better colour control and very significant performance gains over any alternative printer drivers. Versions available for all the popular inkjet printers, including the new Epson colour Stylus. Please specify printer when ordering. Requires Risc OS 3.1or later.

TurboDriver (Canon, HP or Epson)
£49 + VAT (£57.58 inc)

PRESSURE SENSITIVE GRAPHICS TABLETS

The brand new ArtPad graphics tablet from Wacom. A near A6 pressure sensitive tablet that offers over 2000dpi resolution, 256 levels of pressure and cordless pen. Can replace or work alongside the mouse. Compatible with all applications including 'pressure' capable programs such as Photodesk & the Eesox ArtWorks Pressure Tool.



Wacom ArtPad
£169.00 + VAT (£198.57 inc)
Wacom A5
£399.00 + VAT (£468.82 inc)
Wacom A4
£549 + VAT (£645.07 inc)

The BJC-4000 & TurboDriver

The latest inkjet printer from Canon - unique in their range in that it offers both black and white and colour capability. Mono printing is extremely fast and can be at up to 720dpi. It can also produce high quality 360dpi colour prints. The inks are fast drying and water resistant. An ideal solution for those who print primarily in black and white but also require colour. Requires RISC OS 3.1 or later.

£369 + £10 p&p + VAT (£445.32 inc)

Computer Concepts Ltd

Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX Tel 01442 63933 Fax 01422 231632
Email info@cconcepts.co.uk

CONTENTS

Editor's letter

The Acorn market is well known as a hot-bed for innovative product design: take a look at direct drive laser printing and drag-and-drop file manipulation for just two examples. It comes as no surprise, then, to find that Eidos, the company behind the potentially huge market for software decompression of MPEG movies, is from the Acorn market. Read the amazing story of Eidos' algorithms on page 43.

On the subject of innovation, 20 (yes, twenty) pages in this magazine and the entire Computing for the Family supplement were produced on an Acorn: that's over half of the editorial pages you hold in your hands. Impressive, isn't it!

Mark Moxon, Editor

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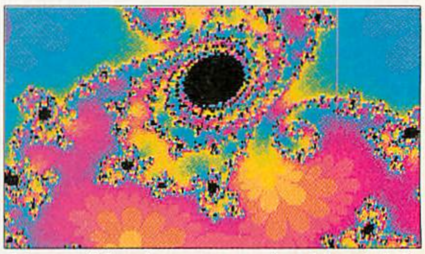
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REGULARS

HANDS ON



FEATURES



January 1995

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NEXT ISSUE ON SALE 26 JANUARY

ICS

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10 out of 10 Maths Statistics, age 6-16 10OU £18
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Chaos Engine RENE £19
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for prepaid sales in the UK

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Genesis Project OAKS £47
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GridPro 4MAT £35
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Hearsay II BEEB £59
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Impression Publisher Plus as upgrade from Impression Publisher COMC £125
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Impression Style site licence COMC £435
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Magpie LONG £50
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NightSky CLAR £63
Noddy's Playtime JUMP £18
Notate, KS2-4+ LONG £49
Oak PCB II OAKS £66
Oh No! More Lemmings (requires Lemmings) KRIS £15
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Oxford Reading Tree Stage 3 Talking Stories, age 5-7 SHER £37
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Photobase Decades: The 1950s LONG £47
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RISC OS 3 Programmer's Reference Manual ACOR VO £99
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No charge for credit cards

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Sibelius 6 primary site licence SIBE £299
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Sibelius 7 SIBE £789
Sibelius 7 education and amateur price SIBE £464
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SparkFS PILL £20
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Speedball II KRIS £18
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Talking PenDown, KS1-3 LONG £53
Titler CLAR £79
Topographer CLAR £59
Touch Type IOTA £38
Trace PILL £9
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TurboDriver Epson Stylus 800 COMC £39
TurboDriver HP COMC £39
Twain Canon IX incl Scan-Light Professional PILL £16
TWO (Task and Window Organiser) ICSO £10
VersaTile OAKS £42
Virtual Golf (not Risc PC) FOUR £23
Wolfenstein 3D POWE £23
WorraCad OAKS £65

Portables

A-Link for Pocket Book ACOR £43
Flash Disc 256K for Pocket Book ACOR £46
Pocket Book 256K ACOR £165
Pocket Book II 256K ACOR £228
Pocket Book II 512K ACOR £278

Online Media tours the USA

ACORN'S new interactive multimedia division, Online Media, has been showing off its wares in the USA. During November, Online Media kit was spotted both at the huge Comdex trade show in Las Vegas and at the Western Cable Show in Anaheim, California.

At Comdex, both a Risc PC and an Online Media set-top box were featured on GEC Plessey Semiconductors' (GPS) stand as a part of an ARM-based product showcase. GPS is one of several licensed manufacturers of ARM-based chip products and a representative at Comdex reported that interest in ARM products was buzzing. Apparently, the largest manufacturer of notebook PCs in the world is to use an ARM processor core as part of a new generation of PCMCIA card controllers. Unfortunately, for contractual reasons, the source was unable to reveal who the manufacturer is, but *Acorn User*'s guess is that it is Toshiba. If we're right, that one customer alone could boost the ARM-core product count into the millions of units per year.



A Risc PC and an Online Media box make an unexpected but very welcome appearance on the GEC Plessey Semiconductors booth at Comdex '94 in Las Vegas.

Later, in Anaheim, Online Media showed a working digital interactive TV system using the now-familiar set top box mated to an 8Gb server, navigator PC and switching system. The cable connections end to end was ATM (asynchronous transfer mode) and a duplicate of the service currently on trial in Cambridge in conjunction with Anglia TV. At the Anaheim event, Online Media used the transmission network of another partner company, Northern Telecom, to broadcast – among other things – a daily show report.

Online Media
Tel: (01233) 425558
Fax: (01223) 425349

Acorn starts testing Risc PC 486 cards

WE'VE seen one, touched one and even played *Windows Solitaire* on one – yes, the Risc PC 486 card really does exist now – and everyone will be able to see one at BETT '95. Acorn has received its very first batch of pre-production ASICs (application specific integrated circuits) from Korea for the impatiently-awaited Risc PC 486 PC co-processor card. Acorn says prototype 486 cards have passed early tests with no serious problems. Examples have already been shown at the Cambridge University Computer Society.

Acorn has reaffirmed its commitment to building an initial run of 500 486 cards to be distributed to VIPs within the industry plus some privileged customers within the first three months of the year. An initial production run of 10,000 units, built for Acorn by IBM Blue Micro, is also scheduled to be delivered by the end of the first quarter of 1995. If the ASIC passes its tests with flying colours, this target should be reasonable.

A Texas Instruments 40MHz 486SXL low power-consumption part will be used in the first Acorn iteration of the card, though the processor will be clocked down to 33MHz. Acorn and co-developers Aleph One have already hinted that future cards will be fitted with clock-doubled (DX2/66MHz) and tripled (DX4/100MHz) 486s.

BBC micro winner

There's life in the old dog yet – twelve years since its launch, the BBC micro is still winning awards. This time it's for *AccessMaths*, developed by the ACE Centre, which is part of Ormerod School in Oxford. *AccessMaths* was originally designed for the BBC micro as an application for developing mathematics skills and it won a Times Education Supplement (TES) and National Association for Special Needs (NASEN) award at the Special Needs Education Exhibition held recently at the Business Design Centre in London. A PC version has followed the BBC version of *AccessMaths* and an Archimedes RISC OS version is under development.

The ACE Centre
Tel: (01865) 63508

Soft Rock Offers

Soft Rock Software has announced a couple of special offers on adventure games. Offer one includes *Escape from Exeria, Guardians of the Labyrinth, Drop Rock, Switch* and *Floopy and Trellis, the Adventure Interpreter.* These total £19.99, saving a fiver on the individual purchases. Offer two is for Risc PC owners only and includes all the above games supplied on a single disc, which reduces the price remarkably by a further £6.

Soft Rock Software
Tel: 0117-949 1634

Pineapple bears more fruit

Pineapple Software is now supplying Canon's impressive new IX-4015 24-bit colour A4 flat-bed scanner. Pineapple supplies the unit with David Pilling's *ImageMaster* and *TWAIN* software as standard, but the Pineapple *Studio 24* image editing package will soon directly support *TWAIN*.

The standard package price is £599 + VAT and when the revamped *Studio 24* is ready, it will be bundled with the scanner for £679 + VAT. An automatic document feeder is optionally available for £269 + VAT.

Pineapple Software
Tel: 0181-599 1476

Full Integration

fireworkz pro

Database, spreadsheet and word processor all in one

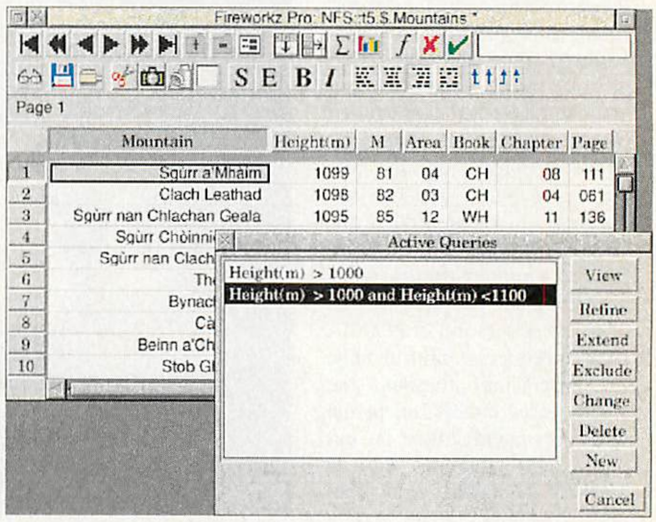
Whether you want to write a report, mail merge a database, create a table, draw a chart or calculate personal finances, **Fireworkz Pro** has all you need. Move seamlessly from spreadsheet to word processor and from word processor to database and keep the same intuitive interface throughout. Data can be shared and moved between all three aspects of Fireworkz Pro, combining power with ease of use.

Recordz is the new fully featured database from Colton software. Flexible options include card index or spreadsheet layout, refinable search queries, easy label printing and mail merging. The only limit to the size of your database is your available disc space. The search language is very simple, with choices such as 'contains' or 'does not contain' - there are no complex commands to remember.

wordz

recordz

resultz



Recordz shares the excellent Z family user interface, making it one of the friendliest databases ever created. The status line helps you with choices and the emphasis is on ease of use throughout the program. Combined with Wordz (word processor) and Resultz (spreadsheet) Recordz forms Fireworkz Pro. Buy Recordz on its own for just £99 or as part of Fireworkz Pro for £149. Recordz site licences start at £198 (10 user), Fireworkz Pro site licences start at £298 (10 user).

- Fireworkz users can upgrade to Fireworkz Pro for only £49
- PipeDream 4 users can upgrade to Fireworkz Pro for £99
- **Fireworkz for Windows** is now available – existing Fireworkz (RISC OS) users can purchase this for £50
- **ClassCardz** - A4 laminated learning cards are now available for Wordz and Resultz at £20 per photocopiable set

If you would like to order or wish for more information and a free demo disc, please contact us at the address below. Or clip the coupon and return it to us.

We accept Access and Visa. Cheques should be made payable to Colton Software. All prices exclude VAT and delivery (P&P £5).

COLTON software

Tel 01223 311881

Name		**Please rush me:**	**Tick✓**
Address		Fireworkz pro info & demo disc	
		Recordz info & demo disc	
		Fireworkz for Windows info & demo disc	
Postcode		ClassCardz info	

Colton Software, 2 Signet Court, Swann's Road, Cambridge, CB5 8LA. Tel +44 (0) 1223 311881. Fax +44 (0) 1223 312010. Email: info@colton.co.uk

Uniqueway releases CD-ROM sampler



The RISC DISC from Uniqueway.

UNIQUEWAY in Cardiff has published a multimedia CD-ROM sampler called the RISC DISC. Uniqueway claims that the RISC DISC is the first CD-ROM for the Acorn market which features commercial demo-software, Public Domain and Shareware programs, plus other software resources all on one disc. Included on the disc are an Acorn Risc PC dealer demo application, which requires a 2+8Mb machine, a recent batch of enhanced-quality Acorn Replay movies, plus a selection of Photo CD format images, though you must already have the necessary Kodak Photo CD-compatible viewer applications to use these.

The 32 contributing companies also supplied Risc PC utilities, programming utilities for C++, Pascal and Ada, with libraries, DTP utilities, a *TeX* application and a PostScript document previewer, disc utilities, desktop utilities, JPEG images, the original *Impression* files containing the whole of *Archive* magazine Vol.7, AVI, FLI and MPEG movies and players.

Interestingly, the user-friendly software interface for the RISC DISC was developed entirely in-house by Uniqueway, who decided that the existing multimedia authoring packages for the Acorn platform, excellent though they might be, were not right for them.

Uniqueway
Tel: (01222) 644611
Fax: (01222) 644622
e-mail: info@uniqway.demon.co.uk

Welcome to the World Wide Web

LAST month, Exeter-based Minerva Software announced its move into providing on-line Internet services for schools. Zynet, the company being set up to handle the new business, is to be officially launched at the BETT '95 show. One of the big attractions of the Internet is the World Wide Web or WWW, an international network of multimedia servers which can be quickly and easily accessed by Internet users who have a suitable WWW browser, like *Webster* or *ArcWeb*.

Zynet is to provide its subscribers with a native RISC OS WWW browser application. Schools and other establishments will also be able to create their own WWW databases for viewing by any of the over 30 million Internet users worldwide. In addition, Zynet will be offering services to link existing local area networks (LANs) into the Internet and providing training. Customers in the South West are also being offered localised community and education information, to be expanded nationwide later on in 1995.

Minerva has released a home-user version of its 'edutainment' package called *PrimeSolver* due, according to Minerva, to a high amount of interest from home users. The consumer version of *PrimeSolver* has a sub-set of features compared with the original schools' version and is priced £49.95 inc VAT.

Zynet
Tel: (01392) 426160
Minerva
Tel: (01392) 437756
Fax: (01392) 421762

Clan Acorn update

LAST month we reported that over a thousand Acorn fans had signed up to join the new Clan Acorn enthusiasts' club during the Acorn World '94 show. Benefits of joining the Clan included advance product information and special offers.

If you missed the opportunity to join up at the show you can still apply by sending a one-time only membership fee of £15 by cheque payable to Acorn Direct to: Clan Acorn, 13 Denington Road, Wellingborough, Northants, NN8.

All new members get a free tee-shirt with that oh-so-funky Clan Acorn design, but the sweatshirt offered to new members at the show is now optional, and can be bought for a nominal £5 extra.

Clan Acorn
Tel: (01933) 279300

TechSoft plotters

TechSoft will be offering special show prices during BETT '95 for its range of Roland Sketchmate plotters. Ex-demo A4 models start as low as £99 + VAT. There will also be some new Acorn driver software exhibited at the show.

TechSoft
Tel: (01824) 780318
Fax: (01824) 780564

VLSI 45MHz ARM

VLSI Technology, the original manufacturer of the ARM processor, has released details of a 45MHz variant designed for use in low power battery-operated equipment like cellular phones. VLSI also sees the processor core – which has a catalogue number of VYF86CO6-004 FSB – being integrated into other products like wireless data systems, video disc controllers, set-top boxes and video games. The new core cell is designed for VLSI's 0.5 micron fabrication process and dissipates just 110 milliwatts when delivering 38Dhrystone 2.1 MIPs.

Acorn clears backlog

Acorn reports that all order backlogs for the Risc PC have been met and new customers should now be able to obtain any model specification, including the very popular 9Mb permutation, either from stock or at very short notice.

Ealing multimedia

Ealing's IT in Education Centre is the newest Acorn Education Centre (AEC). One of its first concerns is the Ealing Multimedia Project, which involves producing multimedia projects about the local community. Submissions will then be collated by the Ealing IT in Education Centre in order to produce a new set of education resources which can be shared by schools throughout the locality.

Five A5000 computers, gained through the pooling of spare Tesco vouchers, have been dedicated to the project. The Ealing AEC already has two Acorn-equipped computer suites plus multimedia production and MIDI music-making facilities. One of the AEC's first tasks will be to run workshops for local teachers outlining how Acorn computers can help with their teaching.

EASY C++ - THE EASY WAY TO LEARN OR DEVELOP YOUR SKILLS IN C++

Easy C++ is the first implementation of the in-vogue object oriented programming language C++ written specifically for Acorn RISC OS systems.

This implementation conforms to the latest Stroustrup text and supports both Templates and Exceptions.



- Uses the much praised Easy C WIMP front-end which allows programs to be compiled, linked and run at the click of a button.
- Supplied with *ANSI C* and *IOstream* libraries. Library facility allows further libraries to be created.
- *Make* facility with automatic generation of Make files.
- Integrated ARM assembler.
- Supports the *Throwback* facility allowing errors to be passed back to editors such as DeskEdit, Zap and StrongEd.
- Superb source-level debugger for C programs (C++ version available in next release). Purchase Easy C++ now and receive an automatic upgrade to the next release.
- FreeWare C library *DeskLib* provides functions for writing WIMP programs.

Easy C++ is not a C++ to C translator but compiles C++ source directly to ARM code making it quick and easy to use. Unlike other systems it runs in only 2MB RAM.

The original highly acclaimed Easy C package is still available which is ideal for programmers wishing to learn or develop their skills in C. An upgrade from Easy C to Easy C++ is also available.

For more information phone 0727 840303 or to order direct call 0727 840305.

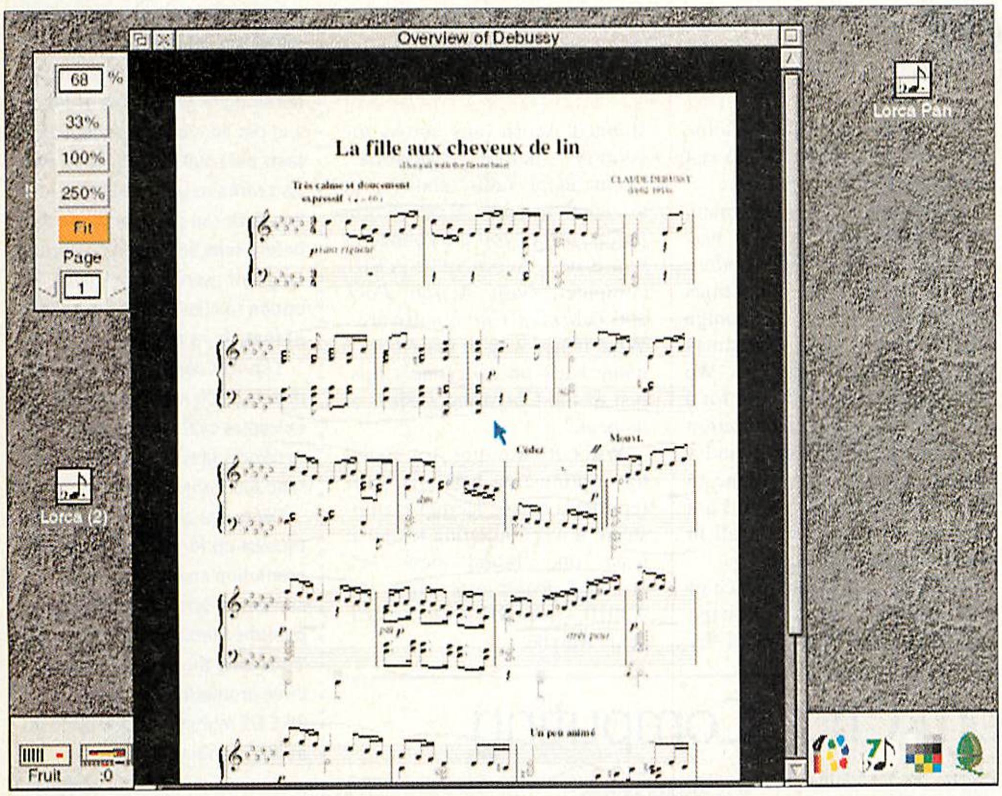
The Easy C Range		
0101	Easy C++	£99
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To upgrade, please return original Easy C Program disc marking your envelope 'C++ Upgrade'.
Please note that Easy C++ does not teach C++ programming.

Easy C++

Sibelius 7: more praise



'Worth buying an Acorn computer simply to run it' – *Sibelius 7* is praised by *PCW*.

THE *Sibelius 7* music processor system developed by Sibelius Software continues to enjoy rave reviews. The latest of these is in the leading PC magazine, *Personal Computer World*, where reviewer Ian Waugh agreed with the established consensus that it's worth buying an Acorn computer simply to run *Sibelius 7*. This follows recent positive reviews in the national press and *The New Scientist* as well as on radio.

Meanwhile, composer Paul Patterson has used *Sibelius 7* to compose and print the music which heralded the first official passenger journeys through the Channel Tunnel on 14 November. The piece – titled *Music for the Royal Eurostar* and ingeniously combining *Rule Britannia* and *The Marseillaise* – was performed immediately before the 8.22 to Paris and 10.23 to Brussels departed from the Eurostar terminal at Waterloo.

Sibelius Software,
Tel: (01223) 302765
Fax: (01223) 351947

Affordable SCSI CD-ROM from Eesox

CD-ROM mastering and software specialist Eesox has set new price standards for CD-ROM drives in the Acorn market with the release of a SCSI model for the Risc PC starting at just £109 + VAT. SCSI interface drives are generally more expensive than proprietary interface alternatives, several of which currently dominate the Acorn scene. Examples of these proprietary alternatives are the new Risc PC drives from Acorn and Cumana, but Eesox undercuts these substantially.

Two drives are offered by Eesox, dubbed 'Gold' and 'Silver' – both being SCSI 2 ready, and compatible with both Kodak Photo CD and Video CD for MPEG movies. The £109 Silver model is a Risc PC internal fitting unit operating at 300K/sec (double speed) with 256K of internal cache. For £70 extra, a Silver drive can be specified as a stand-alone unit with its own power supply. The Gold version is a quad-speed 600K/sec mechanism priced £299 + VAT, which would be a respectable price for a mere double-speed SCSI drive.

Eesox is also offering *CDFast* cache software for stand-alone machines and networks as well as multi-drive towers. To make the most of the SCSI 2 features in the new Eesox drives, and other new SCSI 2 CD-ROM drives, Eesox has released a new SCSI 2 CD-ROM driver. The driver automatically interrogates attached CD-ROMs for SCSI 2 compatibility and configures itself accordingly.

Drives tested successfully include the new high performance quad-speed Sony CDU 561, Toshiba 3501, Pioneer 104x and Apple CD300. White and Green book MPEG CD compatibility is included. The price is £25 + VAT.

Eesox
Tel/Fax: (01223) 264242

Pocket Book releases

Acorn Pocket Book and Psion Series 3 pocket computer users can look forward to a couple of new software releases from Walthamstow-based Purple Software during January. *File Manager*, currently part of Purple Software's existing *Series 3 Tools Pack*, becomes an enhanced stand-alone package. The second offering, called *DataView*, will be of interest to database users.

The built in Pocket Book/Series 3 database application has always been considered a little too simple. *DataView* adds several new features including a user-configurable list view of database files, a fast multi-field sorting capability, the ability to split a single database file into several files, password protection and a mail-merge facility.

Three other packages are currently available from Purple Software: *OrgChart*, *FloChart* and *DrawIt*. Prices are £49.95 on SSD (solid state disc) cartridge or £15 less on an IBM-format floppy disc.

Purple Software
Tel/Fax: 0181-531 8384

Cumana link-up

Leading education players in the Acorn market, Cumana (multimedia) and SJ Research (networking) have announced a joint manufacturing and marketing agreement. Cumana becomes the sole distributor for SJ educational products, like the high-performance ATM-based Nexus networking system. Cumana will also become responsible for manufacturing SJ products. The deal leaves SJ Research free to concentrate on its advanced R&D.

Cumana
Tel: (01483) 503121

New Eesox tablets

Two new graphics aids have been announced by Eesox. The first is the Wacom Artpad 5in by 4in graphics tablet, priced £159 + VAT or £239 + VAT with *Studio 24* image processing software. The second is the College Board/Digital, an A3 drawing board and mouse/digitiser cursor. Included is a parallel motion set square and software, all for £175 + VAT.

Vaughan Allanson
Tel: (01638) 578597

NEWS

ZCL appointed sole A3010 distributor

ZCL PLC, a major UK distributor, has been appointed by Acorn as the sole distributor for the A3010 *Action Pack* and *Learning Curve* bundled packages. The move is designed to fill the gap left by the demise of the Commodore Amiga during the pre-Christmas sales rush.

At £299, the A3010 is by far the cheapest RISC-based personal computer in the world. The consumer games market is currently experiencing a change in direction away from dedicated games consoles from Nintendo and Sega towards PC-compatibles. It will be interesting to see if ZCL and Acorn can persuade some potential PC purchasers to opt for an A3010 pack instead.

Don Carter, ZCL's chairman, commented: 'We knew it was unlikely that Commodore would be back for Christmas and the absence of the Amiga would leave the Christmas market going begging. We have been aware of Acorn for a long while and in negotiation for a number of weeks and I am delighted to have come to this agreement with them. I am sure they will do very well in the next few months.'

Possibly as a consequence of the deal, the following announcement was heard by stunned Acorn fans across the country before Christmas: 'Your local radio station, in association with Acorn Computers, offers you the chance to win a new Acorn RISC A3010 computer, with *Action Pack* and *Learning Curve* software.' What better way to get Acorn's name back on everyone's lips, just as the Christmas rush is at its peak?

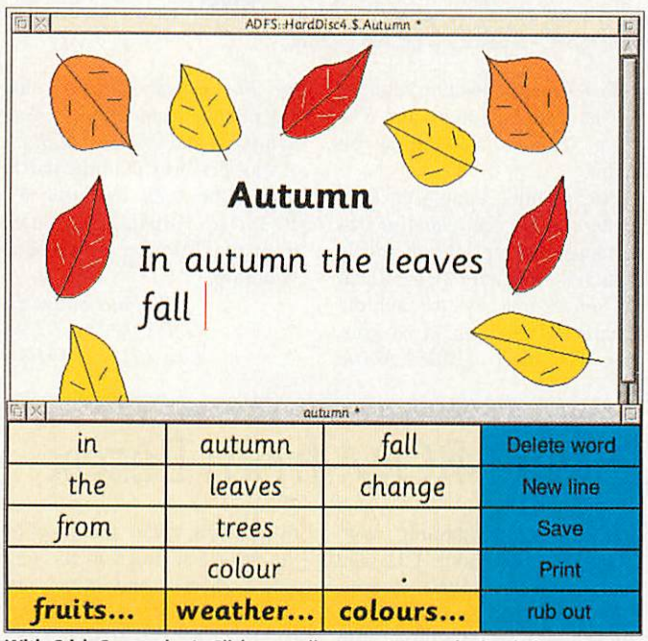
Without wanting to sound too optimistic, here in your reporter's native Hemel Hempstead, it's encouraging to see at least one brand new PC-oriented dealer promoting the A3010 – a product of the ZCL deal? Maybe.

Literacy aid from Crick Computing

ANOTHER relatively new name to enter the Acorn market is Crick Computing, aiming to develop products for education and special needs. Set up in October 1993 by John Crick, a former special needs teacher and IT advisor, its first product is *Clicker*, a package for developing literacy with primary school and/or special needs pupils.

The concept behind *Clicker* is based upon an on-screen grid, with cells containing text which can be selected by a pupil to construct phrases and sentences. Teachers are able to enter their own text selections of up to 70 characters into the cells, of which up to a hundred are available. *Clicker* works in conjunction with a standard word processor of the teacher's choice and all the pupil needs to do is use a mouse to click on a letter, word or phrase and it is entered at the edit prompt in the word processor.

Calls can also work as editing or function keys and they can even be linked to other clicker grids, giving access to new groups of words. Pre-prepared grids are included as standard, but teachers can construct their own grids easily. There is total control of grid size, style and font to cater for people with diminished eyesight.



With Crick Computing's *Clicker*, pupils can enter words simply by pointing and clicking.

Speech playback can also be linked to cell content selection, as can pre-recorded digitised sounds, or even a foreign vocabulary. *Clicker* already has an important fan in the form of Sue Williams, Learning support Service IT coordinator for Cheshire County Council, who reports that the program offers great versatility and, above all, it's quick and easy for a teacher to get to grips with.

Crick Computing will be demonstrating *Clicker* at BETT '95 this month on stand SN11, where it will also be demonstrating a prototype enhanced version called *Switch Clicker Plus* which features improved colour graphics and irregularly shaped grids.

Crick Computing
Tel/Fax: (01604) 713686

New CD-ROM name

Zenta Multimedia is just one of a number of new software houses to join the Acorn third-party industry ranks and Zenta's first new product is a pair of £30 CD-ROMs featuring large libraries of fonts and clip art. *Font Emporium* contains over 500 RISC OS fonts and also contains a font selection utility which can preview the fonts before selection. Fabis Computing *EasyFont* users have a linking option to allow correct installation of fonts from the CD.

ClipArt Collection has approximately 2,500 RISC OS *Draw* format examples of clip art as well as *ArtWorks* files and several thousand monochrome sprites.

Zenta has also given Acorn its thumbs-up for Acorn's CD-ROM promotion and is preparing a number of further CD titles to be published later in the Spring: 'Following the recent CD-ROM drive promotions by Acorn, the RISC OS multimedia market looks as if it is now well under way'.

Zenta Multimedia
Tel: 0121-358 3054

New Storm titles

Smudge the Scientist and the *Calabash Pirates* are the latest releases from Storm Educational Software, to be released at BETT '95. Storm also has a new brochure of all its educational titles.

Storm Educational Software
Tel: (01935) 817699

The Good life

The familiar tones of actor Richard Briers are to be heard in the latest collection of *Oxford Reading Tree* talking stories from Sherston Software, including *Floppy's Bath, The Baby-sitter, The Water Fight, Kipper's Balloon* and *Kipper's Birthday*. The price is £39.95 + VAT. Also launched at BETT will be Sherston's *The All New Talking Animated Alphabet*.

Sherston Software
Tel: (01666) 840433

Dyslexics at BETT '95

Software for helping dyslexic children is to be on show at Sally Systems Ltd at BETT '95 and has been produced by expert Max Lipman over seven years.

Sally Systems
Tel: (01628) 24626



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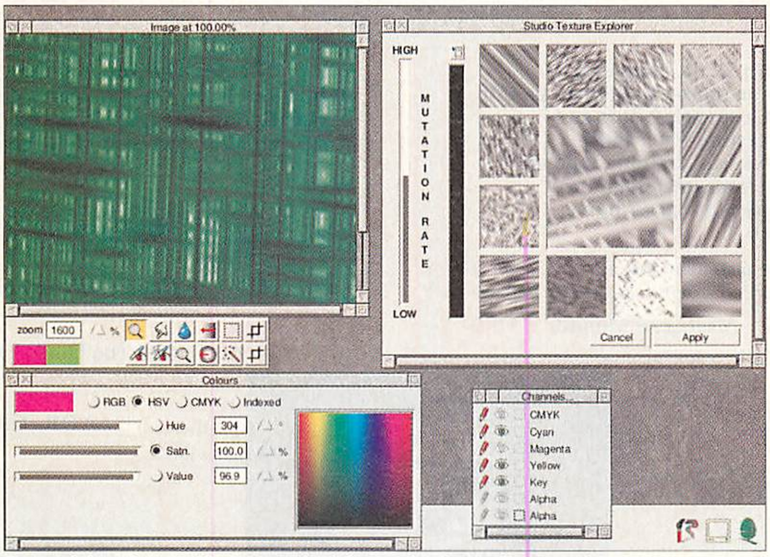
Iota Software Ltd. Iota House.
Wellington Court. Cambridge CB1 1HZ
Telephone: (0223) 566789 Facsimile: (0223) 566788

IOTA SOFTWARE

Graphics

Probably the best painter in the Acorn world

AS WAS hinted at in last month's graphics page, Pineapple has been working hard on its bitmap painting package *Studio 24*, and aims to raise the specification above and beyond the current level of photo retouching software on the Acorn.



Some of the advanced features to look forward to in *Studio 24* version 2.

I have been trying out a pre-pre-release copy of version 2. New features which were up and running were a very quick virtual memory system and an 8-bit (256 level) mask. Surprisingly, the code did not regularly throw my machine into an unrecoverable state of limbo, which allowed the new features to be explored in great depth even at this early stage.

The vastly improved front end is a clear indication of the efforts made in response to the recommendations made from beta testers and other users. The author has been in contact with a high-end reproduction house, with the result that full CMYK separation support and editing is now included in the program.

The 8-bit mask, missing in version 1, has gone more than one step further than other programs which use this separate 'alpha channel' for masking. *Studio 24* can have unlimited alpha channels (memory/disc space allowing) for multiple masks with each colour and alpha channel's activity being controllable via a very simple interface (see screenshot).

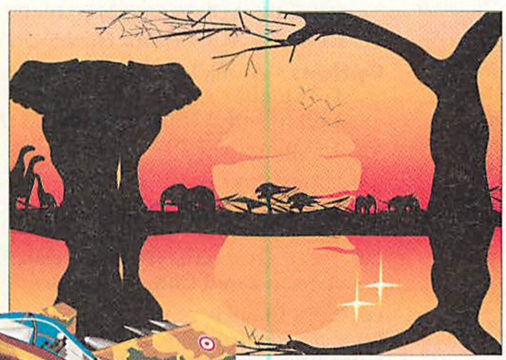
New effects include a texture explorer, backwards engineered from similar tools on the Mac featuring fully randomised texture generation based on fractal algorithms.

Studio 24 is not a Risc PC-only package so, whatever your machine, it could well become *the* package for all Acorn users.

Pineapple Software
Tel: 0181-599 1476

Picture(s) of the month





MURTAZA Sheikh wins this month's £20 prize hands down with a marvellous set of graphics files created in *Draw*. There is little else I can say other than that 15-year old Murtaza has both a mastery of *Draw* and more talent in draughting than most others twice his age. I hope to see much more from this artist in the future. Futher examples of Murtaza's clip art are on this month's disc.



Please remember to include your name and address as a text file with your entries. A description of how your artwork was created would also be useful.

Runaway TWAIN

David Pilling's work on driving scanners on the Acorn via the TWAIN interface is moving at a very fast pace indeed. Already complete is the driver for the Nikon Coolscan slide and negative scanner reviewed by Vita Regan next month and there are also plans for the GT9000 and the £3000 UMAX A4 – a veritable flatbed on steroids.

Professional users at an even higher end can look forward to the possibility of drum scanner drivers in the near future.

David Pilling
Address: PO Box 22, Thornton Cleveleys, Blackpool, FY5 1LR

Ion beater

The Sony Mavika still video camera is much like the Canon Ion but it has almost 75 per cent higher resolution. It uses the 640x480 NTSC video standard which is now supported by Computer Concepts' Eagle M2 in VHS resolution but more significantly, Irlam Instruments' 1Mb 24i16 card can digitise an entire frame from this Super VHS camera.

Its little Magneto Optical disc can store 50 frames and is of course reusable. Prices are sketchy as this non-PAL device is sold only in Japan and America. For more information contact Atomwide about future availability.

Atomwide
Tel: (01689) 838852

It's high time

TJ Reproductions now offers high frequency screening as a quality alternative to conventional half-tone imagesetting.

Effective screen rulings of a stratospheric 600lpi give a very significant improvement over conventional and now aged ruling techniques.

TJ Reproductions
Tel: 0171-372 4430

Contacting me

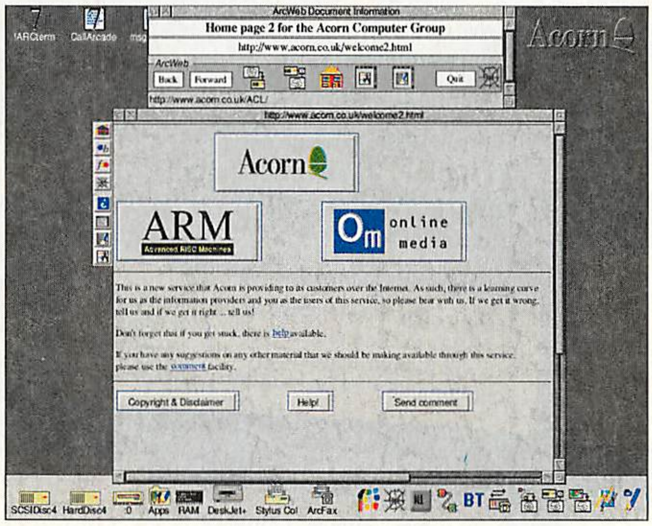
You can contact the Graphics page by writing to me, Jack Kreindler, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: jack@acornusr.demon.co.uk.

Acorn Computer group seeks WebMaster

ACORN Computers' World Wide Web service, previewed at the Acorn World Show, has been online to the Internet for a trial period for public examination and comments.

Regrettably, the service is not run on a Risc PC but on a Sun 4/390 SPARCserver. Images on the pages were created on Acorn machines and software though, using sprites from *Paint* converted to GIF picture format by David Pilling's *ImageMaster*.

Acorn's new range of e-mail and Internet-related products are to be launched at BETT '95, so visitors should see the promised World Wide Web browser at last. This Web view was courtesy of *ArcWeb*, one of two Freeware Web browsers that have appeared in the last few months. Suddenly we're almost spoiled for choice.



Could you spin a better Acorn Web than this?

Acorn is now looking for someone to look after their Web server, and apparently there will be some remuneration. This seemingly part-time job carries the entertaining title of WebMaster.

Acorn says this person will be someone who has experience of HTML – the mark-up language in which Web pages are written. The candidate will be someone who already has access to the Internet and, I suspect, who has plenty of time...

If you fancy yourself as Acorn's WebMaster, e-mail your CV and the HTML of your own improved version of the Acorn Home page to webmaster @acorn.co.uk with 'WebMaster application' in the subject line, and don't forget to add your proposed WebWages!

Internet information fever

FIDONET is a worldwide network of Bulletin Boards run mostly by enthusiasts spending their own time and money on the hobby, and the BBS users can communicate with each other round the globe by Netmail messages. These are passed on from the message writer's BBS through others in the network until the destination system and user is reached.

Netmail messages are usually less than 8Kilobytes – and the cost to the BBS sysop of transferring them is part of the expected running costs of the hobby. Sysops are therefore more than happy to pass these messages on. It may take a few days for a Netmail message to arrive, but that it does arrive provides the fun and wonder of doing it.

However, with the escalating interest in Internet access, some FidoNet BBS operators have offered cross-network connections to allow BBS users to get the flavour of Internet e-mail.

This gives much quicker two-way electronic communication with the many millions of people round the world with e-mail addresses.

A problem for these BBS operators now arises because e-mail is not only used for personal communication, but can also be a transport for any kind of data – program files, mailing lists, newsletters, library listings and so on. These files are often very large, far more so than the average Netmail message.

BBS users who joined to take up the offer of a free e-mail address may have not realised the sheer quantity of data that would arrive for them when they joined mailing list servers or used ftp-by-e-mail servers to get program files.

Data received on this scale has far exceeded the 8Kbytes of the netmail expectation. This makes for longer connect times to download the e-mail, and Sysops are quite understandably reluctant to continue bearing the cost of the longer Internet calls.

To stem the flow of this torrent of data, it has unfortunately been necessary to restrict e-mail access to such sites, or control the size of message packets that can pass though the gateways.

V.Everything?

US Robotics has announced a £100 price reduction on its Courier V.34 modem with it now retailing at £399 + VAT. USR has also launched the promised V.34 version of the popular Sportster FAX modem at an RRP of £299 + VAT.

Both V.34 models are compatible with the earlier 28,800bps V.FC standard as well as lower speed ITU-T standards at 14,400 and 9600 bits/sec.

US Robotics
Tel: (01753) 811180
Hawkastle (USR Sysop Scheme)
Tel: (01784) 449991

Spuddy moves

Spud's Xanadu, described by its new Sysop Stephen Harris as 'the only FREE UK node to the wonderful world and Usenet and Email', has moved to Canvey Island. The system offers free Internet e-mail, your own home development directory on a unix machine, Usenet news, online downloads and an anonymous ftp server.

Spud's Xanadu
Tel: (01268) 515441 8N1

Your Starter for Net

In response to many requests for an easy set-up Internet package, Alan Hassey has gathered all the latest Freeware software you need into a single archive called *StarterPak*.

The package includes documentation and FAQ lists, plus all the software new users need to connect to the Internet via Demon. *StarterPak* is available by ftp from Demon, and for download on Arcade BBS.

ftp.demon.co.uk
/pub/archimedes/acorn-starter-pak

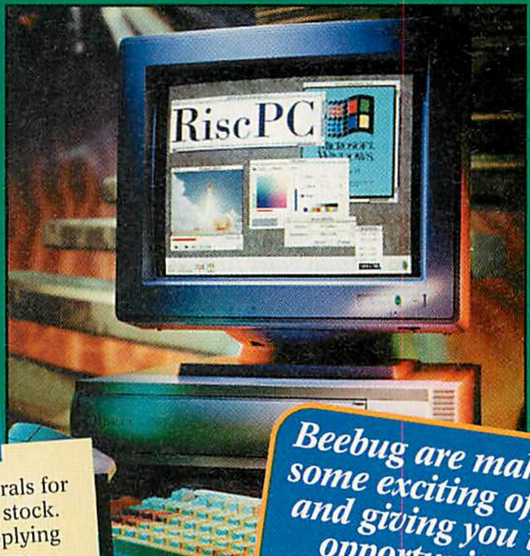
Contacting me

You can contact the Comms page by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, Netmail to DaviD Dade FidoNet#2:254/27.0 or mail #2 on Arcade BBS 0181-654 2212.

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3054e	16Mb DRAM	£429.00
3048e	32Mb DRAM	£989.00
3044e	1Mb VRAM (Only for ACB15)	£129.00
3050e	2Mb VRAM (Only for ACB15)	£169.00
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3056g Cumana CAA 300iA **£210 - Offer price** + free headphones *until Jan 1st.* An IDE unit with 64K cache, powered tray, 320ms access time, audio mixer, ProArtisan 2 CD and Cumana's Photo Album Photo CD. *For other CD players phone for details.*

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3043g	420Mb second hard drive	£299.00
5216g	Beebug 420Mb second hard drive	£249.00
5215g	Beebug 250Mb second hard drive	£184.00
5081c	Econet Interface	£ 49.00
4603e	Ethernet Interface	£ 99.00
4624e	Access Interface	£115.00
3041e	PC Card and DR DOS (*Available Jan '95*)	£ 99.00
4612e	User/Analogue Port	£ 44.95
1972c	Sound Card	£ 69.00

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DTP

Awash with colour

IT LOOKS as though black and white ink-jets will soon be a thing of the past, or at least limited to the portable niche market.

Almost all of the major manufacturers are set to release colour models in the first half of next year.

Both Canon and Hewlett Packard have new machines in the pipeline, and there will also be another Epson and colour models from Star and Lexmark. Users will be spoilt for choice before the end of 1995.

At least another two printers will join the Epson stylus Color at the 720dpi end of the scale with most of the new printers having a two cartridge solution, one CMY (Cyan, Magenta, Yellow) and one black, rather than four separate cartridges for each colour. This is the best solution for many people who do a lot of black and white work – letters and so on – and only a little colour.

Various industry watchdogs have claimed that the difference in cost between producing a black and white model and a colour one is no longer worth considering, which explains the move by all the manufacturers towards colour and hence the predicted demise of the colour printers' black and white counterparts.



The BJC-4000 is the first of a new breed of ink-jets and it'll soon be joined by offerings from all the major printer manufacturers.

The exact launch dates and pricing of these new machines has yet to be set. With so many to choose from the market will be highly competitive, so it looks as if the printers are going to be very affordable.

Meanwhile, the small group of thermal wax printers looks like it's heading for the scrap heap. Though thermal wax printers often give better colour reproduction than their ink-jet counterparts, their resolution often leaves a lot to be desired and apart from two or three reasonably popular models they appear to have made little impact on the printer market.

In the balance

SEVERAL people have written or asked me about the need for colour-balanced monitors. Now it's true that for professional work colour-balanced monitors are very important. The art editors' Macs (hiss) at IDG Media are colour-balanced to get the best match between the colours that appear on the screen and the colours on the printed page.

For many small print organisations colour-balancing isn't really an issue. For budget print work some experience with colour and a good eye are used to make up for the disparities between the colours displayed on screen using RGB phosphor and the colours produced by the CMYK ink when printed.

I am aware that colour-balanced monitors cost an absolute fortune and require special lighting conditions to be truly effective. It also requires colour balancing software and a certain amount of hardware feedback for control of each monitor's gamma levels.

I don't know of anyone supporting anything of this sort on the Arc or who's even looking at it. If anyone is forthcoming with any information about this process I'd be very pleased to learn more.

What's in a name?

ACORN has been giving lots of flashy presentations about its Risc PC and other new developments recently. They often include – among other things – lots of pretty slides.

Given the existence of the Burden Polaroid printer reviewed in this issue, it's a bit embarrasing to find that Acorn is the first customer listed with the PC-based company that produced the slides. Couldn't Acorn use a pseudonym for such things (preferably one that *doesn't* come right at the start of the alphabetic list)?

Lighter Apples?

A new version of *MacFS* named *MacFS Light* has been launched. The original *MacFS* supported both floppy discs and removable Syquest drives. While this was invaluable to users wanting to transfer large graphics files around – *Acorn User*, for instance – the £99 price tag was a little hefty.

Unlike its big brother, *MacFS Light* only supports transfer to and from floppy discs on the two systems. It works with and will format 1.44Mb Macintosh discs and will only set you back £49.

Computer Concepts
Tel: (01442) 63933

Photos galore

Corel has launched over 100 CDs each with 100 Photo CD images on. The CDs are all themed with titles like *Animals*, *People of the World* and *Technology*. The Photo CDs cost between £20 and £30 each and there are two sampler discs with a selection of images from across the range on each.

The images are royalty free, which means that they may be used in DTP work but not re-sold, as the copyright remains with the photographer.

Pretty as a picture

Several of the big professional photo libraries such as Hulton Duesch are producing Photo CDs of their current catalogues. The samplers only include low resolution images but you can obtain the images as either slides, transparencies or a Photo CD images.

The sampler discs tend to be for PCs or Macs but the images themselves work just as well on the Arc. At least one modelling agency has put its portfolio onto Photo CD with others expected to folow.

Could this spell the demise of the alt.binaries.pictures newsgroup on the Internet?

Contacting me

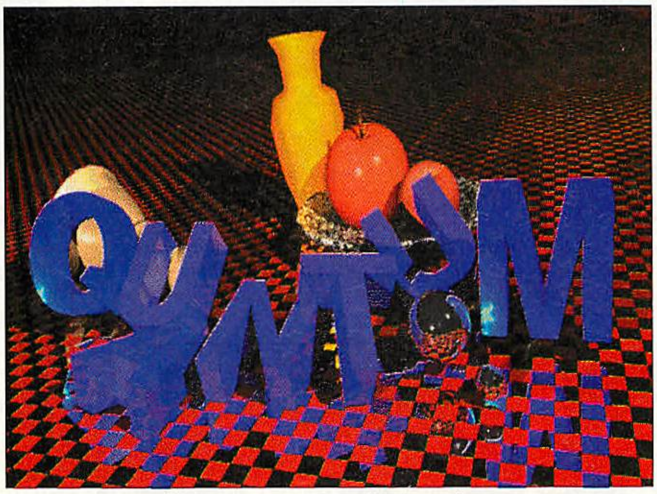
You can contact the DTP page by writing to me, Steve Powell, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: sevep@acornusr.demon.co.uk.

Public Domain

The best demo?

LIQUID DREAMS is a demo of the Acorn's graphics capabilities – with a difference. Written by Quantum, *Liquid Dreams* is designed to be the best demo, and it easily succeeds.

It starts off with 'Quantum' scrolling down the screen, and from there on it steadily improves, with decent sound, graphics, and design. All the different effects scroll into place, leading on from the last one with smoothness that I've never seen in other demos on any Acorn computer.



The stunning graphics on Quantum's *Liquid Dreams* demo.

The demo is meant to be compatible with all Acorn computers inluding ARM2 machines, as long as you've got 2Mb or more. I encountered no major difficulties using it on a Risc PC, although I did encounter a slight niggle where the music wasn't properly in sync with the graphics, but using *GameOn* removed this problem.

Overall, the whole demo is superb, all the effects merge together, and there is a wealth of effects for you to see and hear. Despite being someone who isn't normally impressed by demos, this program will be on my pinboard, and I'm looking forward to future releases. The only major problem with the demo was that I couldn't exit it, unless I reset the computer; this effectively means I can't use it as a screen saver. The demo would also have benefitted from more solid vector graphics, especially in the cityscape section which was vector dot based. Also, the system font used in a couple of places could have been tidied up a bit.

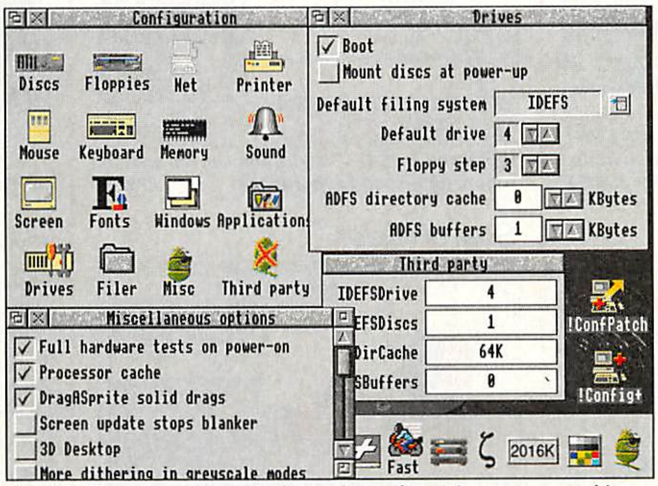
Despite these drawbacks, this demo is easily worth the cost of a PD disc and is the best demo I've seen. *Liquid Dreams* is available from The Datafile and most other PD libraries.

Henry Morgan

Note: This review was written independently by a reviewer from the Digital Databank BBS, as Paul Wheatley is on the team that wrote *Liquid Dreams*.

Config+

CONFIGURE was Acorn's way of making it easier to tailor a machine to your own needs but in the opinion of Sam Kington, it only does half the job. There's a vast array of options and settings stored away in an Acorn's battery backed CMOS RAM, many of them can only be set with complex instructions from the command line. Sam's new program, *Config+*, gives access to these settings from the desktop.



Config+ allows you more control over the configuration on your machine.

A small patch program is used to quickly set up *Config+*, which looks very similar to Acorn's original *Configure* program. Clicking on *Configure* normally produces a window of 12 icons, which allow the configuration of different areas of your machine.

Config+ adds four new icons which fill most of the gaps that Acorn failed to fill. The first two icons cater for the filer and disc drives in depth, with a Misc icon for everything from processor cache to dithering options. The final icon uses a module search to give configuration settings for third-party software on expansion cards.

Config+ also provides extended saving routines that allow all CMOS settings to be saved and reloaded, which the Acorn version fails to do. *Config+* is Freeware and can be obtained from The Datafile on disc UT192.

ARV

Text adventure fans should check out a recently improved version of *Armed Robbery with Violence* from adventure team, The Unbroken Circle. After a robbery attempt that was even less successful than in Reservoir Dogs, your character is left with the task of escaping from the North of England to the safety of South America. Put together with a mix of digitised graphics, sampled speech and a warped sense of humour, *ARV* is detailed and enjoyable.

The game is Shareware, and can be obtained for £5 from: Tim Wiser, Cowgate Cottage, Lea Road, Lea Bridge, Derbyshire DE4 5JL. Note that the game is not suitable for youngsters, and has been given a 15 rating by the authors.

Datafile takeover

Unfortunately David Pratt is unable to continue running Gem PD, due to an increased work load. The good news is that The Datafile has taken over the running of the library and is providing support for existing customers. Gem PD's range of software will be merged with The Datafile's existing catalogue.

Tiger

Graham Crow has re-released his filer viewing utility – *Tiger*. The program acts not only as a file-based displayer with long (110 character) filenames, but also provides facilities for indexing hard and floppy disks.

A PD version is available from most libraries, and was on the August *Acorn User* cover disc, but registering is recommended for the regular user despite the high cost of £15. Contact: Graham Crow, Manor Lodge, Llangattock-Vibon-Avel, Monmouth, Gwent NP5 4NG.

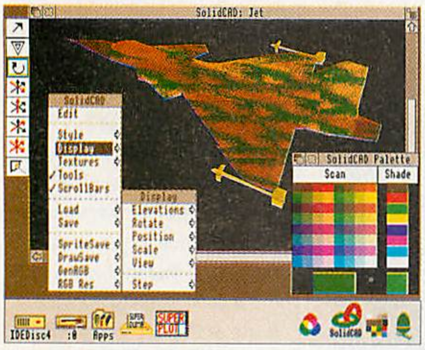
Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP. By e-mail to quantum@digibank.demon.co.uk or online on the Arcade BBS.

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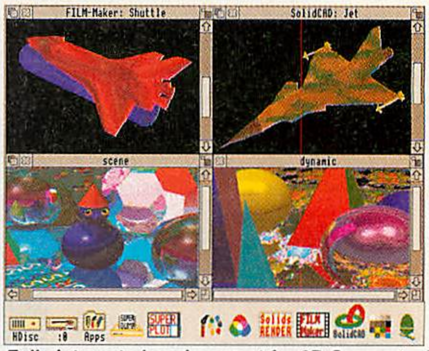
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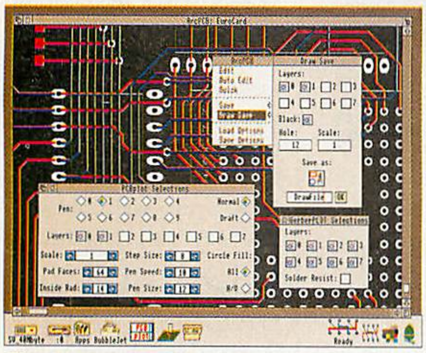
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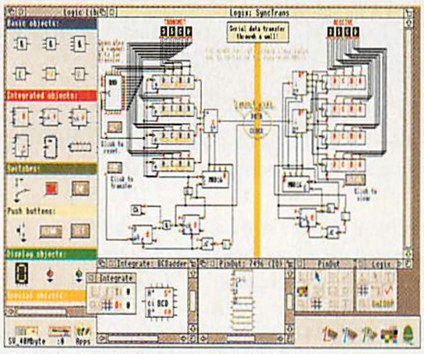
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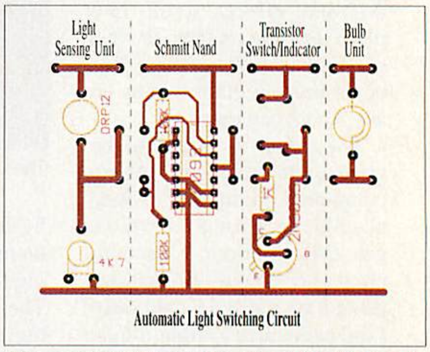
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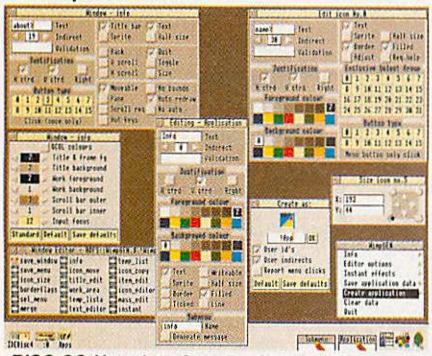
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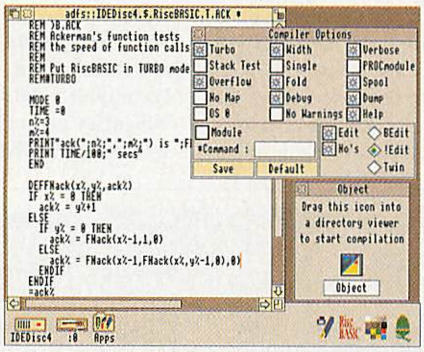
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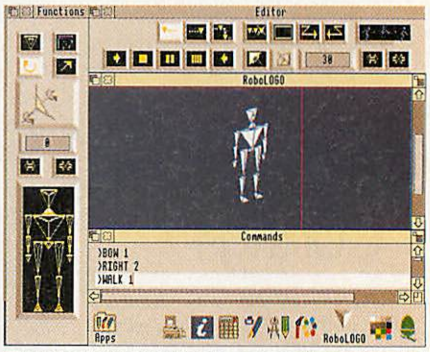
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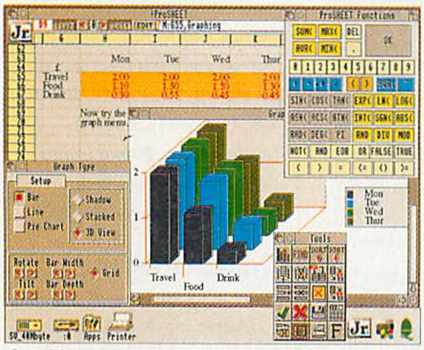
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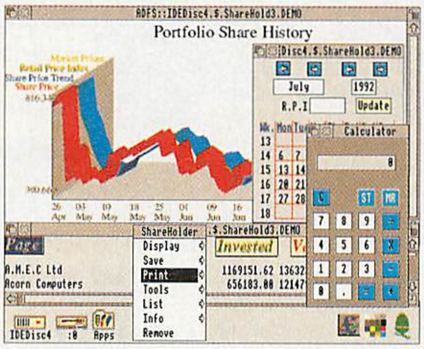
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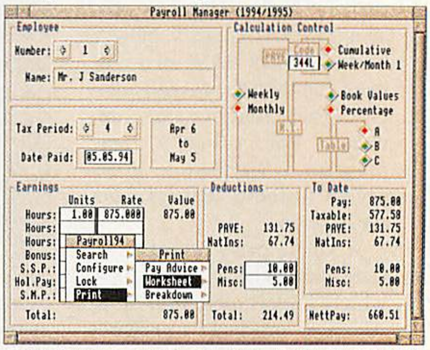
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For more details on our complete RISC OS software range please enquire for our free Desktop Solutions Colour Brochure.

Business

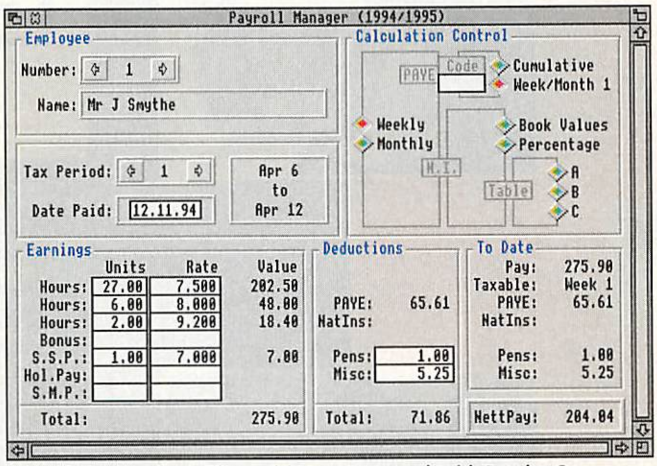
Prophetable Apricote joins up with Silicon

APRICOTE customers will soon be able to use a new version of *Prophet* which can work side-by-side with *Payroll Manager* from Silicon Vision. *Prophet 2*, as it will be called, will have a totally revamped user interface and aims to be serious competition against *Enterprise* from ACP.

For those of you who don't already know, *Prophet* has been designed for the non-accountant, without jargon. It is editable, which means that if you enter an incorrect entry you can simply edit it like you would in a spreadsheet. However, that also means that one of your more greedy employees could make a lot of money, unnoticed...

One of the main criticisms of *Prophet* in the past is that because it was written in the days before the RISC OS style guide, the user interface was unique. *Prophet 2* has been promised a standard desktop interface.

I believe that *Payroll Manager* is the ideal partner for *Prophet* due to its ease of use. In fact, it's probably the easiest payroll package for any platform.



Payroll Manager from Silicon Vision, soon to work with *Prophet 2*

Unfortunately, it manages to get some of its ease of use from having very few options, rather than from having a neat interface. If you want features such as company cars, you'll have to look elsewhere.

There is an annual registration fee of 25 per cent of the RRP. This will entitle you to receive yearly updates, which means you don't need a secretary glued to the television on Budget Day.

Unfortunately, there is no way of making changes by yourself which means you *have* to pay.

At present there haven't been any discussions concerning bundling the two programs at a reduced cost, though I hope they will do so.

Apricote Studios
Tel: (01354) 680432
Silicon Vision
Tel: 0181-422 3556

Blind leading the blind

WITH all the advertising that Intel and Compaq have been doing recently, it's very easy to be carried away with the 'industry standard'. People see these adverts and automatically think that they *must* be good.

This is where the 'blind leading the blind' syndrome comes from. After being convinced by these adverts, and not knowing any better, they recommend the products to others.

The same happens in computer stores – the shop assistants have probably never heard of Acorn let alone used the computers.

They don't recommend them and the user, comes out with a DOS-box which causes them strife when being set up and used, rather than saving their time.

When looking for a business computer, the one and only thing you need to look for is the *best* solution in your price range rather than whether it is 'industry standard'.

Just because everyone else does something one way doesn't mean that you should if there's something better.

Acorn's products have always been technologically excellent, software is hailed as better and easier to use than on PCs, and many thousands of companies use Acorns – and, yes, there are thousands.

To prove that Acorn computers are prominent in industry, we'll be doing various case studies in this column in future months.

Acorn PCW this year?

SECRETS aren't being disclosed by saying that Acorn will be replacing its lower-end machines this year.

It has been suggested that Acorn should release a sort of Amstrad PCW or Compaq Presario. I can only hope that Acorn produces a machine for under £900 which doesn't look like an Amiga, has a hard disc, 4Mb of RAM and perhaps *Pipedream 4*.

After all, you can buy a 486SX2 for the same price with roughly the same specifications.

I expect that Acorn will want to include an internal CD-ROM drive which could push the price up slightly.

Sensorium accounts

Sensorium has just released a multi-tasking accounts package for RISC OS and we'll be taking a closer look at it next month.

Sensorium
Tel: (01274) 820722

Fancy Label printing

While I expect most of you have heard of *Ultilabel* from Le Computer, *Fancy Labeler* is less well known. It is a multi-tasking labelling program especially for tractor-paper labels. Although normally priced at under £30, at present there are substantial special offers.

Mewsoft
Tel: 0171-267 2642

Enterprise hints and tips

Bored with invoices that use your printer's in-built typefaces? Well, contrary to popular belief it *is* possible to use outline fonts in *Enterprise* if you have a DTP package such as *Impression*.

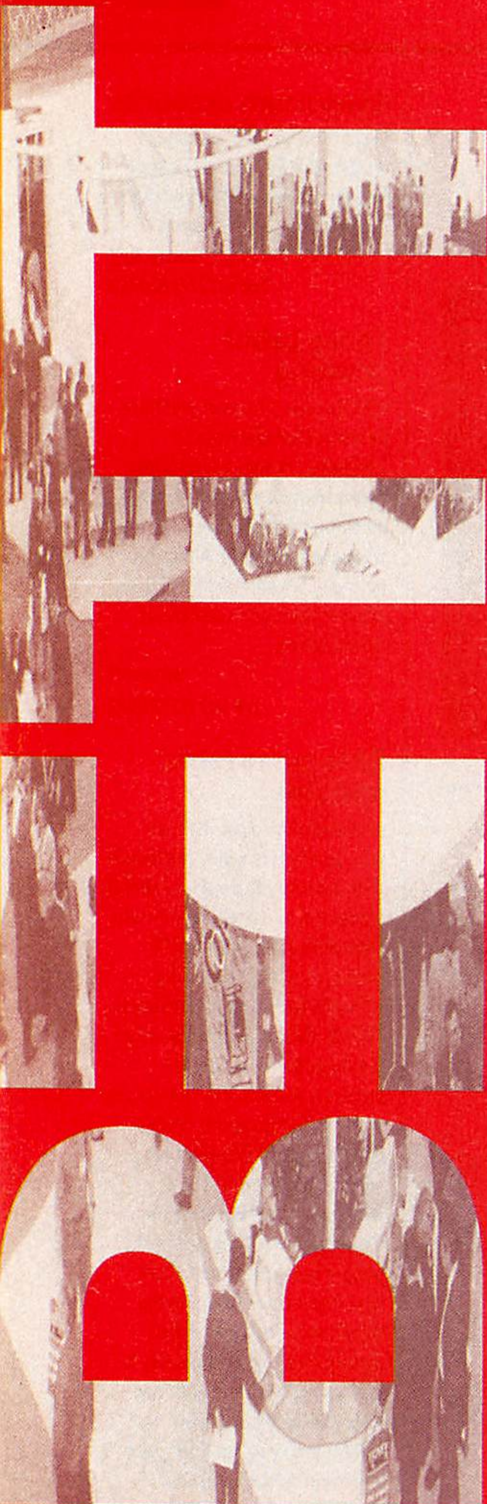
Firstly, back up your accounts. Double-click on *Enterprise* while holding down Shift. If, for instance, you want to change the Profit and Loss report, double-click on *NominData* and then *Forms*. This will result in a window containing all of the 'Format Files' for the Nominal Ledger being displayed. Now load *Impression*. Drag the file *ProfitLoss* onto the icon bar pictogram of *Impression*. Lay it out how you want it and then save it as text with styles.

Next time you use *Enterprise* and want a Profit and Loss report, save the report into *Impression* and print it.

It's unfortunate that these facilities aren't incorporated into *Enterprise* itself, like in *Sage* and *Prophet*.

Contacting me

You can contact the Business page by writing to me, Alex Singleton, at *Acorn User*, IDG Media, Europa House, Adlington Park, Macclesfield SK10 4NP, by fax: (01625) 850652 or by e-mail to alex@acornusr.demon.co.uk.



Education

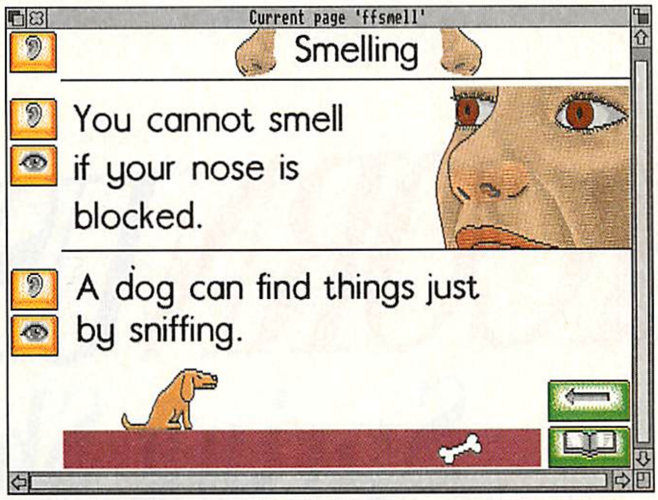
Sherston and 4Mation strike again

TOP education software houses 4Mation and Sherston have both just announced some new products which will be of great interest to schools and for parents looking for quality software for their children to use at home.

4Mation has produced another adventure program using its own in-house authoring package. *A Mouse in Holland* follows the same format as *Betsi, Discovering Dinosaurs, Granny's Garden* and *Flossy the Frog*.

This time the graphics are by Hans Rijnen and as with all of his work, it is clear he spends a great deal of time and care drawing the scenes.

The story is by Mike Matson and features Martin the Mouse touring Hans' home country solving problems and collecting moles, fruit and Edam cheeses. At £29.50 (£59 for site licence) and with over 4000 advance orders, *A Mouse in Holland* looks set to be yet another classic.



Sherston has just released *Talking Topics*, a new series of talking books.

Sherston has used its talking book technology to create a series called *Talking Topics*, of which there are six in the series. *The Body, Pets, Homes, Land Transport, Dinosaurs* and *The Seashore* are priced at £11.95 each or £59.50 for the set.

Site licences are two times for primary and three times for secondary. Each topic is probably best described as an encyclopedia for infants as they are designed to encourage individual self-learning from a very early age. As with *Talking Stories*, the user can listen to phrases and then repeat them. Individual words can be spoken and there is a little bit of animation by way of a prize. Primary Learning Resource Centres take note.

4Mation
Tel: (01271) 25353
Sherston
Tel: (01666) 840433

World War II on CD

THIS product just missed November's CD round up, which is just as well because I would have had to include it, but what would I have had to remove to fit it in?

This is yet another excellent product from Academy Television and is an encyclopedia of everything related to WW2 in an easy-to-follow format. History departments will be falling over each other to get this CD which, along with some others, will be regarded as a minimum requirement for History teaching in the 1990s and beyond.

Acorn has concluded that education needs more funding for Information Technology. Perhaps someone might care to start by providing funds for schools to purchase products such as this, and then offering meaningful training for teachers so that it can be used to its full and considerable potential in the classroom.

The school of the future

CONGRATULATIONS to Nicholas Breakspear Secondary School in St Albans which is now £25,000 better off having won the Acorn Education 2000 competition.

The competition invited schools to submit proposals to show how developments in computer technology could be used to create new educational opportunities for all pupils. Nicholas Breakspear School beat 400 other schools with its proposal to access on-line information via satellite, TV, weather station, teletext and telephone links for analysis and dissemination across the school, and for use as a cross-curricular educational resource.

It all sounds fine in theory, but how are they to achieve this? Watch this space.

Congratulations also to Steeple Morden Primary School and to Hillcrest School and Community College who were runners up.

More money please

Acorn has released details of recent research showing that more investment in Information Technology in schools is required. Acorn claims that, on average, one computer is shared by about 18 students in primary schools in the UK.

Bubble help update

Miles Sabin's excellent *BubbleHelp*, marketed by David Pilling, is a *Help* application which was only available with *ArcFax*. After a good response to the application, David has now released *BubbleHelp* for £5 from David Pilling, PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR. The program has been revised, is fully Risc PC-compatible and works well across a network.

I have included a line in my network boot sequence to automatically install *BubbleHelp* into each network station on power-up. To do this, add the following to the file that loads *!System, VProtect, NetUtils* etc. (note that it's all one line and has been split manually to fit in this column):

```
Filer_Run Share::Prog.
ram.$.Resources.!Bubbl
eHlp.!Run
```

BubbleHelp should be placed in a folder called *Resources* in the root of the exported application disc called *Programs*.

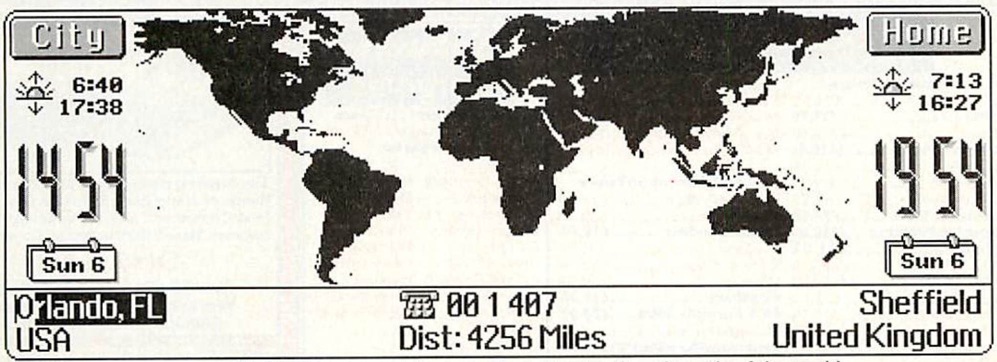
The last clip art

Since slating clip art months ago, several companies have written outlining their alternative clip art policies. PES has announced new prices for school site licences. £9.50 for a single disc and £19.50 for 800K's worth of Pick'N'Mix selection. This month's disc has a few pictures from PES so judge the quality for yourself.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: gpreston@arcade.demon.co.uk

Not just a prettier face



World helps to ensure you don't wake your relatives up when phoning the other side of the world.

BEING one of those people who bought the original Pocket Book as soon as it arrived on the scene and having loved it ever since, I was overjoyed when Acorn announced the launch of the Pocket Book II. Based on the Psion 3a, it contains many improvements over the original including a faster processor, a larger and higher resolution screen, a better audio system and a faster comms port.

In use, the Pocket Book II is like a dream come true. It's simple to use yet very powerful, it's fast and responds quickly to even the most complicated tasks and the screen is so clear it's unbelievable.

All applications have been enhanced to take advantage of the new graphics and most applications now have a zoom in/zoom out feature which allows you to alter the font size used within a program. Also, most programs now take advantage of the ◆ key which allows you to change between views at the touch of the button.

Write and *Spell* have both been updated considerably. *Write* now contains outlining, better font and style systems and vastly improved graphics. It is now a very powerful word processor capable of handling anything from short memos to your latest book.

Spell has also been enhanced considerably and as well as being a fast spell checker it is now a fully-featured thesaurus and dictionary containing 660,000 synonyms and 50,000 word definitions, all of which integrates very nicely with *Write*; it's magnificent.

Cards has changed little since it first appeared. The new version allows DMTF dialling from within the program and slightly better search facilities. However, there is still no sign of a sort facility which would make life much easier for us all.

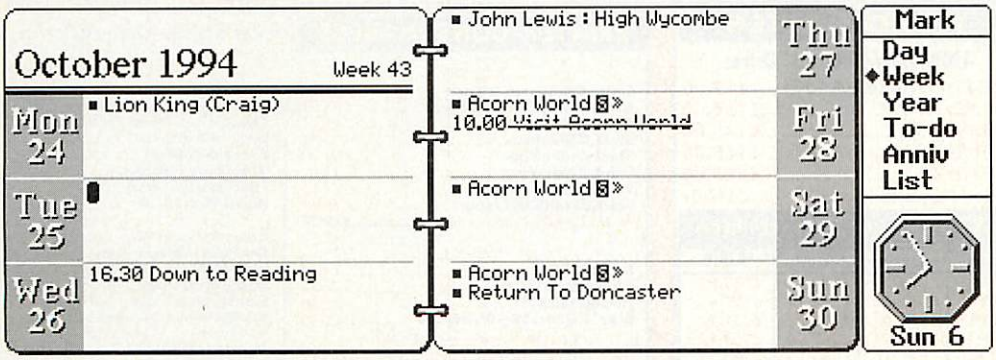
Abacus has also changed very little since its first release, but then again it didn't have to. I've always felt it to be the most powerful built-in application. The new version has the added bonus of financial functions, but that's about all folks.

World is a new program to Pocket Book users and contains information such as dialling codes, geographical positions and sunset/sunrise times of over 500 cities worldwide.

Schedule is really Psion's excellent *Agenda* program which has been extensively rewritten and improved. It can now show daily, weekly, and yearly views all in a very attractive way. Entries can be timed, untimed or repeating, and rather than having to delete items once they have occurred you can now cross them out. *Schedule* also has the facility to attach memos to entries which could be very useful.

OPL and *Plotter* are basically the same applications that Acorn has been distributing on SSDs for a while now. Both feature enhanced graphics, but only *OPL* takes advantage of the new ◆ key and *Plotter*, although good is dreadfully slow; a graphic calculator is much faster.

Overall, the Pocket Book II's built-in applications are excellent and the whole machine oozes quality. I can't recommend it enough – the only advice I can give is to go out and buy one immediately.



The excellent *Schedule* – shown here in weekly mode.

Acorn World 1994

I'm writing this column after visiting this year's Acorn World show at Wembley.

While the show was well-attended, and Acorn proudly showed off Risc PCs so big that they ran out of expansion cards and had to fit a toaster to one, from a portable perspective the show didn't offer much to get excited about.

There were very few new portable products around for either the A4 or the Pocket Book.

The Pocket Book II did, however, seem to be selling well and Warm Silence Software had the new *Adventure Pack 1* on sale, but that was about it.

Let's hope for a bit more at the *Acorn User* show in May; the Pocket Book II is an excellent product and deserves a lot more support.

Calling all OPL programmers

If anyone out there has written any good *OPL* programs and wishes to tell the rest of the world about it, please drop me a line at the usual *Acorn User* address.

I'm interested in featuring as many programs as possible in an *OPL* special coming soon to a column near you. There is even a possibility that some programs might find their way onto the cover disc.

Next time

In the next column – in the February issue – I'll be taking a long hard look at the Public Domain programs available for your Pocket Book and Psion 3.

Just in case you're thinking 'well, that'll be a short column then,' you should know that there are over 400 applications available.

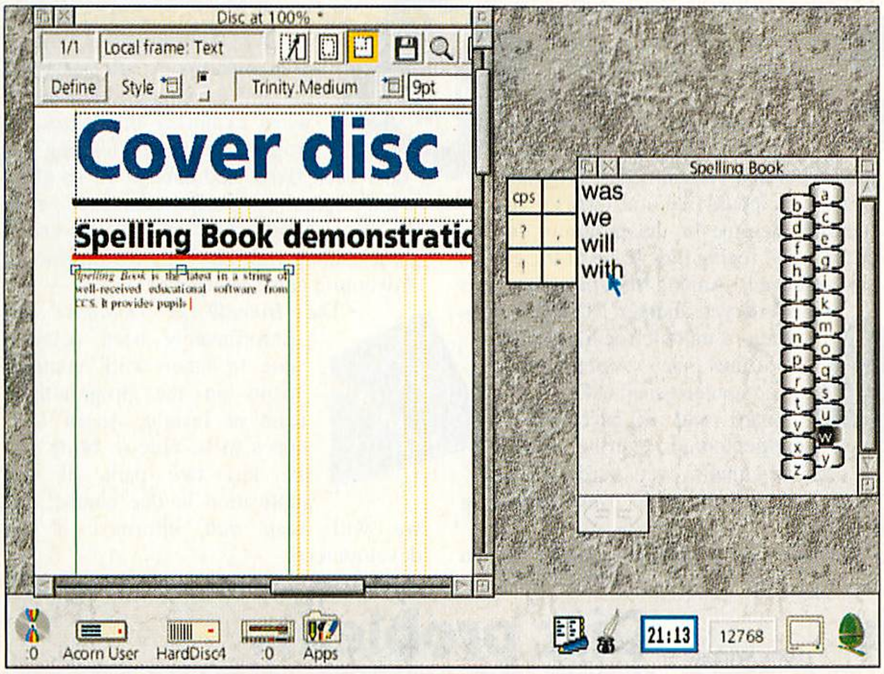
Contacting me

You can contact the Portables column, by writing to me, Mark Taylor at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: markt@acornusr.demon. co.uk.

Cover disc

Spelling Book demonstration

Creative Curriculum Software



Click on a word in the *Spelling Book* window to enter it into the DTP document. Punctuation marks are available from the panel to the left of the words, and if the 'cps' button is selected, the word is capitalised.

***SPELLING** Book* is the latest in a string of well-received educational software from CCS. It provides pupils with a simple computer spelling book which they can use to help them with their writing and spelling.

Words can be entered directly from the 'book' into a DTP package or a word processor such as *First Page* or *Impression Style* simply by clicking on the word in the book.

Dictionaries of words are easily created and can be tailored to suit individual pupil or class needs. Teachers can also choose from a number of pre-set dictionaries; for instance, sets of keywords, or words relevant to particular National Curriculum topic areas. Both pupils and teachers can easily add words, making *Spelling Book* a highly flexible resource. Although it is aimed at school use, and Key Stages one and two of the National Curriculum, it is also possible that highly specialised dictionaries would have other uses – for instance, a list of hard-to-spell technical terms.

Dictionaries can be 'activated' – turned on and off – to control which words are available. This is useful for concentrating on spelling 'words of the week', for instance. To help children learn the spelling of these words, three games are provided as an integral part of *Spelling Book*.

The program is quite different from spell checkers. Children can look up words when they need them, rather than checking later. This can lead them to pay more attention to the spelling of words, rather than simply relying on the spell checker to correct any mistakes. A child can bring up a dictionary of words which he or she especially needs without the usual clutter of words which are not needed.

Using the demonstration

To run the *Spelling Book* demonstration provided on the cover disc, double-click on it. Clicking on the icon on the icon bar will open the main window. Clicking on one of the letter buttons on the right of the window will display a list of words beginning with this letter, assuming that there are any in the current dictionary.

To enter a word in a document, load up your favourite word processor or text editor and make sure that the caret is in one of its windows. Clicking on a word in the *Spelling Book* window will enter it at the caret, usually with a following space. Punctuation can be entered from the panel to the left of the *Spelling Book* window.

You cannot load or edit dictionaries in this demo version of *Spelling Book* as you can in the full version. However, you can select and de-select them by choosing the 'Dictionaries' option from the icon bar menu. Also available from the icon bar menu is the 'Preferences' option, allowing you to set up the font that is used, whether words have spaces after them, whether the *Spelling Book* window closes after a word has been selected, and other options.

The wordsearch

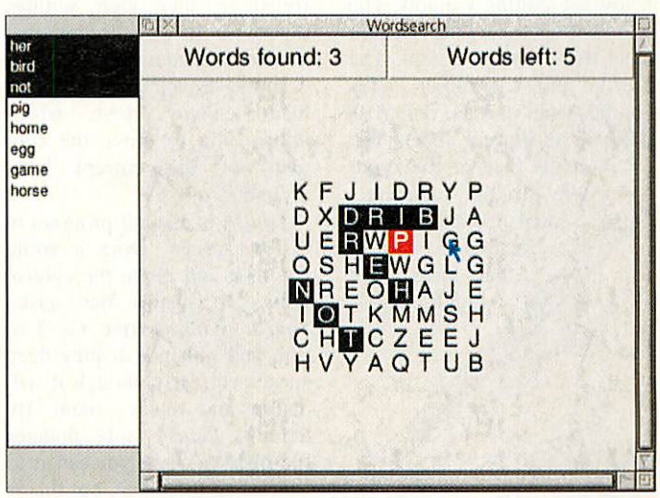
The wordsearch game is the only one of the three *Spelling Book* games which is available in this version of the program. It is started by choosing it from the icon bar menu and uses words from the active dictionaries. The words hidden in the grid are listed on the left. When you have found a word in the grid, click on the first then on the last letter of the word. If it is correct, the word will be highlighted.

When all words have been found, a 'congratulations' message will appear, and another grid will start.

The other two games available with the full version of *Spelling Book* are: *fireworks*, which builds up the design of a firework display as correct answers are given, culminating in an animated firework display, and *art gallery* which rewards correct answers by displaying tiles which end up sliding around to display pictures.

Spelling Book has been applauded by teachers who have seen it in action – now you have the chance to judge it for yourself. The full version costs £39 + VAT or £89 + VAT for a site licence.

Creative Curriculum Software
Tel: (01422) 340524



The *Spelling Book* wordsearch game. To 'guess' a word, click on the start and end letters with the mouse. Options such as the number of words, size of the grid and whether or not the words appear diagonally are set from the 'Preferences' dialogue box accessed from the icon bar menu.

Article tie-ins

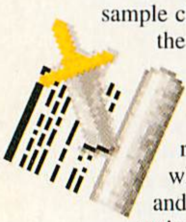
Various authors

AS USUAL, a number of the archives on the disc tie-in with articles elsewhere in the magazine. For more information, see the relevant articles.

• The *C* archive contains two short C programs. One, *Kate3*, is the photograph database written entirely with pointers and not arrays, just to show it can be done. The other, *Humpty* prints useful and useless facts and figures about a list of variables.



• The *Education* archive contains some sample clip art from PES, as mentioned on the Education page.



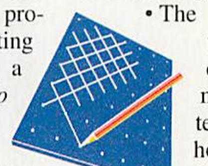
• The *Pic* archive contains some clip art from Murtaza Sheikh, if for no other reason than to show-off what can be done with *Draw* and a little imagination and patience. Murtaza walked away with the Pic of the Month award on the graphics page this issue, and deservedly so. It just goes to show, you don't need to spend a fortune on software – you can do wonders with the applications that come free with the machine.

• The *StarInfo* archive contains the usual selection of off-beat programs and utilities, all excellently compiled and documented by the Daves Acton and Lawrence. If you are a budding Archimedes programmer, you could do far worse than looking at some of the programs in this archive and seeing how some of the effects are achieved. Among the programs this issue are yet another 3D-effect program, a module for manipulating strings in Assembler, a computer-generated *Go* board and a psychedelic multicoloured string of colours that's even harder on the eyes than last month's ever decreasing circles.





• The *Adventure* archive actually ties-in with an article which we carried last August. In that issue, Graham Nelson gave a history of Adventure games and supplied two examples on the cover disc. Unfortunately, one of the examples was faulty, as many intrepid adventurers discovered when exploring the mazes, as the program crashed. This bug has now been fixed, and here in all its glory is the original *Advent* Colossal Cave game, the great-grandfather of all Adventure games, along with *Zip*, the Infocom-format Adventure game interpreter.



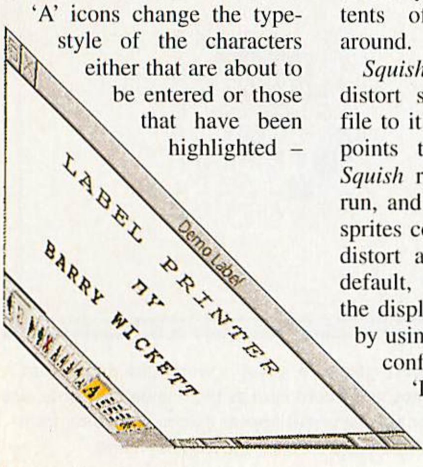
• The *HomeWorks Database* has unfortunately been delayed, due to other work commitments in the programming team at Insight. *Acorn User* hopes to be able to bring you the last two parts of this application in due course, and we will keep you informed of all developments.

Label and Squish

Barry Wickett

LABEL is a label-generating program for any readers with an Epson-compatible printer. *Label* uses the printer's own typefaces to generate the labels which, while perhaps less attractive than using a RISC OS printer driver and an outline font, is an awful lot quicker. *Label* is a text-only program, ideal for printing out many copies of the same address label.

The whole program is largely controlled using the toolbox which is displayed below the editing window. The two arrows alter the current label that is being edited. The green plus symbol adds another label and the red cross deletes the current label. The 'A' icons change the typestyle of the characters either that are about to be entered or those that have been highlighted – use the Adjust button and drag over an area to highlight it. The next three icons justify the current line of text. The last icon toggles the editing mode between insert and overwrite.



The submenu 'Misc' only has one option that needs explaining. The option 'Settings...' displays a window that allows you to customise the application to suit your own needs. If you drag a file to this window then it will be automatically loaded next time you run the application. Don't forget to save your settings otherwise it will 'forget' that you set a standard file.

In the 'Label' menu is a submenu called 'Move' which allows you to move the contents of the current label around.

Squish is a small program to distort sprites. Drag a sprite file to it and move the control points to distort the sprite. *Squish* requires RISC OS 3 to run, and will not display deep sprites correctly, though it will distort and re-save them. By default, *Squish* only updates the display when you tell it to by using the menu, but this is configurable. Untick the 'Linear' option to distort sprites more freely.

Disc problems

OUR cover discs are thoroughly tested at every stage of production, but one or two faulty discs may slip through. If you suspect that you have a faulty disc, check whether it verifies by choosing 'Verify' from the menu produced from the floppy disc icon on the icon bar.

If the disc does *not* verify, then it is physically faulty and should be returned to PC Wise, Dowlais Top Business Park, Dowlais, Merthr Tydfil, Mid Glamorgan CF48 2YY, who will replace the disc free of charge.

If it does verify, contact the editorial office at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or telephone (01625) 878888.

While we do test all the programs on the cover disc, we are unable to try them on all possible combinations of computer, hardware and software. We try to support RISC OS 2, but much of the software written for the disc does require RISC OS 3.1 or above, as software writers are switching to the new operating system. Let us know of any problems.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 1.801 from Pineapple Software.

Note for techies and other menu-haters

At the suggestion of a number of people on the usenet newsgroup comp.sys.acorn, who were unhappy with the way that magazine cover disc menus and de-archiving systems booted up automatically, there is now a system variable to prevent the *Acorn User* menu system from auto-booting. If you use the following, probably in your boot sequence:

```
set Magazine$Disc -noboot
```

the menu system will not automatically boot when the disc is first accessed. You will then have to open the archives by Shift-double-clicking on the relevant pseudo-application and double-clicking on the archive file itself.

You can still run the menu program explicitly by double-clicking on it. Please let us know if you experience any problems with this, as it has not been possible to test it on all machine variations.

An ultra hi-performance fileserver

nucleus

Nucleus is an ultra high-performance fileserver for Acorn networks. It offers greater speed and flexibility than any other Acorn based server whilst remaining backwards compatible with older generation networks and computers.

Care has been taken to streamline every aspect of the design so that Nucleus performs well even under extreme load from large nets. The product has been designed to handle upwards of 100 computers.

Larger hard disks, larger files, larger directories, faster loading and saving, improved printing and far more powerful management tools are just some of the improvements provided by Nucleus. Phone for a brochure or to request a demonstration.

Pricing

Nucleus 1-10 stations	£ 199.00
Nucleus 11-25 stations	£ 399.00
Nucleus 26-50 stations	£ 549.00
Nucleus 51-100 stations	£ 749.00
Nucleus 100+ stations	£ 1,299.00

Nucleus Linkable Components (NLCs)

CD Server NLC	£ 199.00
Netgain NLC - fast application server	£ 199.00
Digistore NLC - tape backup software	£ 79.00
PC Connect NLC - for DOS connectivity	£ tba

digital services

9 Wayte Street, Cosham, Portsmouth
Hampshire PO6 3BS Tel 01705 210600

CD sharing for networks

CD server

CD Server is a software product which allows one or more CD-ROM drives to be shared over a network. To the network clients, it is just as if they have a local CD-ROM drive attached to their computer.

By allowing every station on your network access to a single CD-ROM, CD Server saves the massive costs involved in purchasing a drive for each computer. CD Server will transform multimedia accessibility on your network.

Available either as a stand-alone server or as an NLC.

CD Server software £199.00

All prices shown are ex-VAT, which is chargeable at 17.5% on all items shipped within the UK.
Please add £1.50+VAT carriage to all orders.

NEXT MONTH IN ACORN USER



Into the crystal ball

All the *Acorn User* contributing editors have sat down and stared into their crystal balls, and next month we bring you the result. What will the future of the Acorn market hold in graphics, comms, DTP, business, games, education, public domain, hardware and the battle with other platforms? All will be revealed...

Designing magazines

We've been designing magazines on the Acorn platform longer than anyone else, and recently we've been doing complete supplements on the Risc PC. Next month, find out how to get the best from your layouts with advice from the experts.

Colour scanners

The latest 24-bit colour scanners under the spotlight, from expensive SCSI devices through to hand-held scanners.

I wrote that...

Continuing our look at the faces behind some of the most popular Acorn programs of our time, we meet up with Eddie Edwards, the brains behind *Wolfenstein 3D*.

To be sure of your copy, please fill in the coupon below and hand it to your newsagent. Or why not take out a subscription, which includes a gift pack. See the Subscribers' Page for details.

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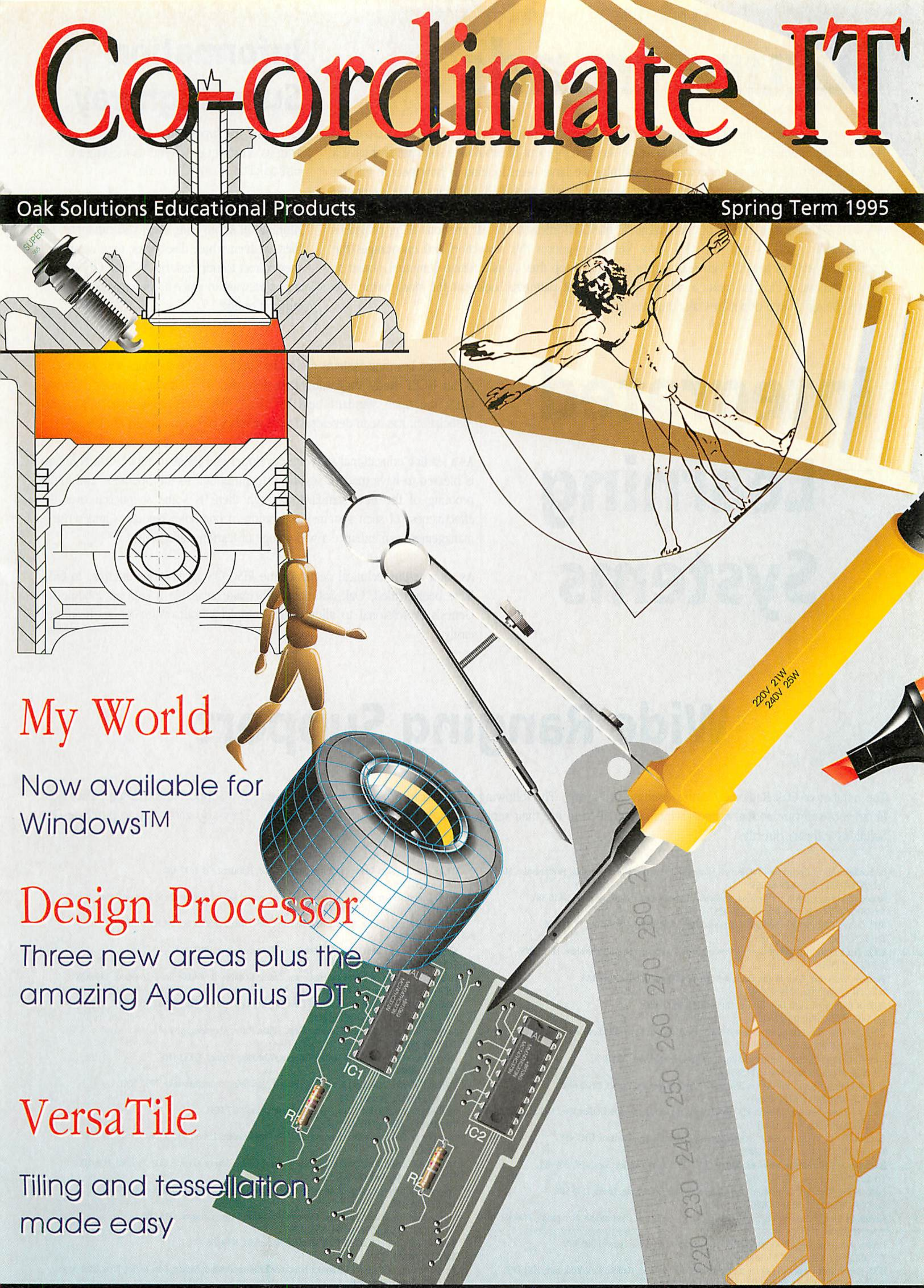
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NEXT ISSUE ON SALE 26 JANUARY DON'T MISS your issue of Acorn User

Co-ordinate IT

Oak Solutions Educational Products Spring Term 1995



My World

Now available for Windows™

Design Processor

Three new areas plus the amazing Apollonius PDT

VersaTile

Tiling and tessellation made easy

Design Processor Release 3

Future trends

There have been a number of changes at Oak Solutions recently as the company has adapted to customer requirements. We now concentrate on the development of innovative software and have a number of exciting projects underway. In particular we have been looking at how people interact with their software and have thrown away a number of established traditions - are computer interfaces old enough to be called traditional? Recently released, Apollonius PDT discards all those tedious CAD menus in favour of slick, minimal click, effortless tools. All previous tiling programs operate with a grid to stick the tiles onto. VersaTile ignores this restriction and encourages the investigative style of a child with real shapes on a table top then adds intuitive computer power to allow enquiring minds to create a whole new world of patterns. Look out for more barriers to learning being broken down by Oak Solutions in 1995.

Information Superhighway

EMail and the superhighway have caught up with us. You can now send us messages to `us@oakltd.demon.co.uk`

For those of you with access to SparkFS running on Acorn computers you can archive files, or even whole directories, then email them direct to our desktop. Why not try it next time you want to place an order or have a support query?

Integrated Learning Systems

Integrated Learning Systems are in the spotlight at the moment with the results of an NCET study suggesting that they may significantly improve learning. OILS, the open standard held by BESA, the British Educational Suppliers Association, has been developed by a number of companies in the UK.

As a leading educational software developer and BESA member, Oak Solutions is pleased to have made a significant contribution to the openness and future proofing of the new standard. Though there is some scepticism over the effectiveness of such systems, integration of computer resources and sensible management can enhance a wide range of learning situations.

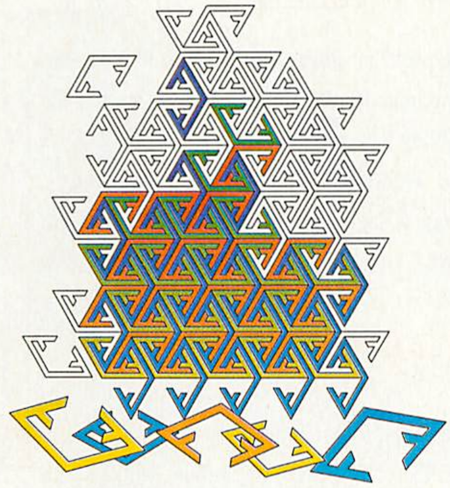
As soon as the technical details of the RISC OS applications interface to OILS have been settled, Oak Solutions will make available a support module for Genesis Professional to allow OILS compliant courseware to be developed easily.

Wide Ranging Support

The number of Oak Regional Centres continues to grow. The following centres can provide you with cost-effective support and training. They hold libraries of software so that schools which are entitled to use their services can view and try before purchasing. They also allow you to purchase Oak Solutions software directly.

Bedfordshire Micro Electronics Unit, Russell House, 14 Dunstable Street, Ampthill, Bedfordshire, MK45 2JT
Tel: 0525 405220, Fax: 0525 405128
Bexley Education Support and Training, Hillview, Hillview Drive, Welling, Kent, DA16 3RY
Tel: 081 303 7777 ext 4246, Fax: 081 319 4257
BITT Centre, Education Centre, East Hampstead Park, Wokingham, Berkshire, RG11 3DF
Tel: 0734 773045
Bucks IT Centre, Unit 9 Abbey Centre, Weedon Road, Aylesbury, Buckinghamshire, HP19 3NS
Tel: 0296 392304
Cheshire Micro Unit, Rock Mount Court, 1-3 Liverpool Road, Chester, CH2 1AA
Tel: 0244 390088, Fax: 0244 377688
CITE, St Ivo School, High Leys, St Ives, Huntingdon, PE17 4RR
Tel: 0480 460280, Fax: 0480 460270
Cleveland Education Computing Centre, Prissick Base, Marton Road, Middlesborough, Cleveland, TS4 3RZ
Tel: 0642 325417, Fax: 0642 310078
DESCIT, Chatsworth Hall, Chesterfield Road, Matlock, Derbyshire, DE4 3FN
Tel: 0629 580000 ext 6852 Fax: 0629 585588
Dorset IT Centre, Bovington Centre, Bovington Camp, Wareham, Dorset, BH20 6NU
Tel: 0929 405059, Fax: 0929 405266
Dudley Advisory Service, Saltwells EDC,Bowling Green Road,Netherton,Dudley,West Midlands,DY2 9LY
Tel: 0384 634155,Fax: 0384 410436
Durham Microtechnology Centre, New College, Darlington Road, Durham, DH1 4SY
Tel: 091 384 7325, Fax: 091 384 1409
Education and Microtechnology Unit, Sandwell EDC, Oldbury, Warley, Sandwell, B69 4PJ
Tel: 021 544 2001, Fax: 021 511 1022
EdIT Centre, West Park Curriculum Development Centre, Spen Lane, Leeds, LS16 5BE
Tel: 0532 782762 Fax: 0532 740811
Hampshire Microtechnology Centre, Connaught Lane, Paulsgrove, Portsmouth, Hampshire, PO6 4SJ
Tel: 0705 378266
Information Technology Service, Finstall Centre, Stoke Road, Bromsgrove, B60 3EN
Tel: 0527 574654, Fax: 0527 570261
ITAL, Health Training & Development Centre, Free School Lane, Halifax,West Yorkshire, HX1 2PT
Tel: 0422 357832, Fax: 0422 348783
ITCAS, Banney Royd Teachers Centre, Halifax Road, Huddersfield, HD7 4NL
Tel: 0484 513299
Jersey Education Department, Professional Development Centre, Highlands, St Saviour, Jersey, JE4 8QJ
Tel: 0534 509500, Fax: 0534 509800
Kingston Schools IT Unit, Kingsdowne Centre, Ewell Road, Surbiton, Surrey, KT6 6HL
Tel: 081 547 6847
Kingswood Centre, Barn Lane, Nr Albrighton, Wolverhampton, WV7 3AW
Tel: 0902 847000, Fax: 0902 845424
Liverpool IT Education Development Centre, Dulcie Cottages, Riversdale Road, Liverpool, L19 3QN
Tel 051 225 8127, Fax: 051 494 1597
North Yorkshire Advisory Service, Staff Development Centre, Park Grove, York, YO3 7ED
Tel: 01904 626 721, Fax: 01904 622439
Northern College, Computer Education Dept, Hilton Place, Aberdeen, AB9 1FA
Tel: 0224 283500
Oxford Brookes University, Wheatley Campus, Wheatley, Oxford, OX33 1HX
Tel: 0865 485886, Fax: 0865 485937
Rufford IT Centre, Mansfield Road, Edwinstowe, Mansfield, Nottinghamshire, NG7 1QH
Tel: 0623 824329, Fax: 0623 824 328
Sandfield Centre, Sandfield Road, Lenton, Nottingham, NG7 1QH
Tel: 0602 535000, Fax: 0602 535175
Stockport IT Curriculum Development Unit, Dialstone Centre, Lisburne Lane, Stockport, SK2 7LL
Tel: 061 474 2227
Trafford TVEI, Sale West Curriculum Development Centre, Manor Avenue, Sale, Trafford, M33 5JX
Tel: 061 962 2996, Fax: 061 969 3342
University of Brighton, Dept of Art & Technology in Education, Falmer, Brighton, BN1 9PH
Tel: 0273 643334
University of Strathclyde, Jordanhill Campus, Southbrae Drive, Glasgow, G13 1PP
Tel: 041 950 3000 x3273, Fax: 041 950 3278
Wakefield IT Centre, Woolley Hall, Woolley, Wakefield, WF4 2JR
Tel: 0226 384451
West Glamorgan Centre for Computer Education, Elmwood Road, Baglan, Port Talbot, West Glamorgan,
SA12 8TF Tel: 0639 822656

VersaTile



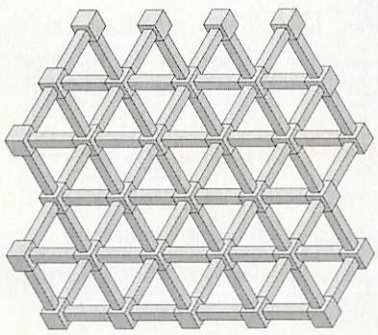
VersaTile is a revolutionary new tiling and tessellation program. It is designed to be accessible to users from primary school age onwards, yet has the power to allow very advanced investigation and design work.

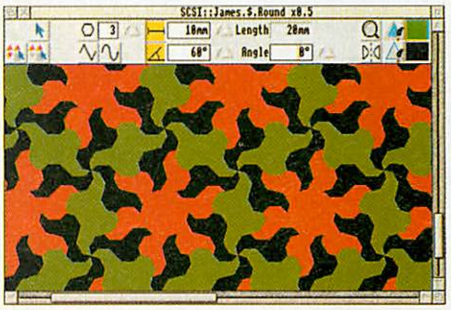
VersaTile has a very simple user interface, which allows the user to select and size regular polygons or to draw their own shapes, using straight lines or curves. Line lengths and angles can be fixed or made variable at any stage.

These shapes can be coloured, copied, rotated and reflected, either singly or in groups, so that the creation of repeating patterns and tessellations becomes very simple.

The application's most powerful feature is the way in which shapes can be edited on screen. Once a shape or a group of shapes has been selected and edit mode entered, any vertex can be selected and then dragged to a new position. If a group of objects has been selected, all similar ones are modified in a single operation.

VersaTile does not require the use of a grid. Instead it uses a sophisticated algorithm to snap adjoining shapes together.





The toolbar can be configured to offer regular shapes only, so that younger children can begin to explore tiling, tessellation and manipulating shapes. Drawing with compass, pencil and ruler requires considerable accuracy. VersaTile now brings precision drawing and placing of shapes within the reach of younger children.

In its full configuration, VersaTile becomes a very powerful tool for exploring the fascinating world of tiling and tessellation at any level, whether as part of a study of mathematics or as a powerful aid to design.

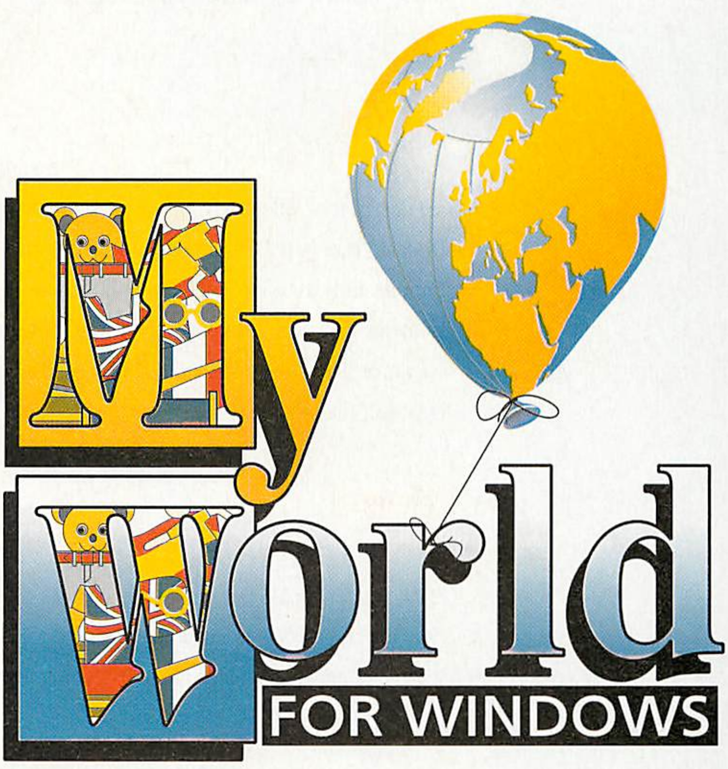
VersaTile is available now on the Acorn platform and a Windows™ version will be released during 1995.

My World, one of the most popular and widely used applications ever produced for the Acorn platform, is now available for PCs running Windows™ 3.1 and above.

Originally developed by the Derbyshire IT team as a tool for children with special needs, My World has proved to be so flexible and easy to use that available screens now range from early years to high school and beyond, with subject areas including modern languages, maths, science, design, history and geography.

The concept of My World is deceptively simple. Screens consist of graphics files which the user can manipulate and edit with a simple point and click interface. Objects can be rearranged, copied and deleted. Text can be added and edited. A number of screens can be linked together. Sets of linked screens can be edited by the user, so that My World becomes a simple form of participative multimedia.

New screens can be created on the PC using Oak Draw for Windows™, a vector drawing package which produces files compatible with Acorn's Draw. PC Oak Draw files can be transferred to Acorn machines and only need to have the file type changed before they can be loaded into Draw or My World.



Similarly, all existing Acorn My World screens can be converted to Windows™ by copying to PC disc and resetting the file type. New screens can therefore be created on either platform and used or edited on both.

My World for Windows is available to UK schools from NW SEMERC 0161 627 4469. UK Retail sales are via Oak Solutions.

Tools for design technology and maths

Apollonius PDT *NEW*

£150 (upgrades from WorraCAD/OakPDT £75) v0.93 Arc

Revolutionary desktop parametric 2D CAD. Incredibly easy to use. Three simple tools, point, line and circle, give access to a comprehensive range of geometric construction facilities without requiring a cumbersome array of modifier and object snap icons. Realtime interactive parametric geometry enables mechanical simulation and greatly speeds editing. Outputs to printers and plotters via Draw Print & Plot (supplied).

Arclight

£45 v1.07 Arc

High speed ray tracer for Euclid and Mogul. Creates ray traced sprites or films of Euclid 3D images and Mogul animations.

Design Processor 3 *NEW*

£1200 (site) optionally payablein 3 annual instalments v3.0Arc

The revolutionary integrated design environment. Price includes site licences for over 20 applications and vast amounts of resources and information. Areas covered include Food, Electronics, Kitchen Design and Packaging. Version 3 features new areas of Pneumatics, Mechanisms and Living Room Design.

Euclid

£50 v2.19 Arc

3D design tool. Effectively a 3D version of Draw. De-facto standard Archimedes 3D application. Imports and extrudes drawfiles. Orthographic, isometric and perspective views, in wire frame, solid colour or light source shaded. 3D images can be imported into Genesis.

Mogul

£25 v2.07 Arc

3D Animator for Euclid. Automatically moves cameras and objects in Euclid files to produce stunning animations which are saved as Ace Films.

Oak Draw for Windows™

£70 v0.23 PC

Drawing package similar in concept to Acorn's Draw on the Archimedes. Windows™ users can enjoy file compatibility with Archimedes Draw users. Oak Draw for Windows™ can also be used with the wide range of Draw clip art available for the Acorn machine.

Oak Logic

£70 v1.00 Arc

Design and test logic circuits on screen before building. Uses NOT, AND, OR, NAND, NOR & XOR gates. The drawing on screen is run as a simulation showing logic state of all inputs, outputs and connections. Allows more complex devices to be built up as chips. Supplied with a library of pre-defined circuits. Ideal as a logic tutor.

Oak PCB II

£70 (upgrades £35) v2.02 Arc

Electronic design system for both printed circuit board (PCB) and schematic layouts. With a user interface modelled very closely on Draw, (including hot-keys), Oak PCB is very easy to learn to use. The application supports up to 4 layer boards. Supplied with comprehensive libraries. Version 2 incorporates toolboxes as pane windows for convenience, non-orthogonal tracks, and improved text entry. Outputs to printers and plotters via Draw Print & Plot (supplied).

Rephorm

£50 (upgrades £15) v1.04 Arc

Morph one sprite image into another, distort a single image or perform fades, wipes, flips and other special effects. Supports OLE, clearfiles, 15 and 24 bit sprites. Produces sprites, Ace Films and Acorn Replay files. JoinFilms application supplied allows a number of Ace Films to be joined together to produce a multiple sequence as a single film. As well as being useful for producing animations, the distortion feature makes Rephorm ideal as a modelling tool in Design & Technology.

Splice

£30v1.11 Arc

Creates animated films from sets of sprites. Can also be used as an editor for existing Ace Films (as produced by Rephorm, Mogul, Tween etc). Useful for changing compression type and size of existing films.

VersaTile *NEW*

£45v1.00 Arc

Tiling and tessellation package. Simple but powerful user interface allows a huge range of tiling patterns to be generated quickly and accurately. Sophisticated but intuitive editing makes VersaTile a joy to use. The toolbar can be configured to offer regular polygons only, so that younger children can begin to explore tiling, tessellation and generating shapes.

Tween

£30 v1.11 Arc

Drawfile animation package. Takes images created in Draw and then calculates frames by 'inbetweening'. Films ideal for use with Genesis.

WorraCAD

£70 v1.27 Arc

2D high precision desktop draughting package. Fully featured editor with comprehensive geometry facilities, automatic associative dimensioning to BS308. The best selling CAD system for the Archimedes desktop. Outputs to printers and plotters.

Information

Multimedia

Genesis Project

£50 v3.02 Arc

The new 'entry level' Genesis. Even more powerful than its predecessor Genesis Plus, yet much easier to use thanks to a new simplified user interface. Allows pages of information to be created and linked together in an almost unlimited number of ways. Text, Drawfiles, Sprites, PC Bitmaps, Acorn Replay Movies, Ace Films, Euclid Files, Armadeus and WAV sound samples, Maestro music files and Artworks images are all supported. Suitable for primary schools upwards.

Genesis Professional

£120 v3.02 Arc

Genesis Professional starts where Genesis II left off. The de facto standard multimedia authoring package for the Archimedes. More powerful than before with a new easy-to-use user interface. Includes object linking and embedding (OLE), enhanced script language and new data types (see Genesis Project). Genesis Professional includes access to a powerful script language which allows the creation of interactive pages such as databases, talking stories and question and answer sessions. The addition of global variables to the script language makes it easy to keep scores and status information throughout an application.

Genesis SDK

£800 v3.02/1.05 Arc/PC

The complete multimedia authoring bundle for the serious developer, with licences to distribute applications produced using Genesis free of charge. Includes Genesis Professional for RISC OS and Genesis for Windows™.

Genesis for Windows ™ *NEW*

£70 PC

Multimedia authoring package for Windows™. Based on Genesis Plus for RISC OS.

Genesis Upgrades

£35	GI/G+ to Genesis Project
£90	GI/G+ to Genesis Professional
£770	GI/G+ to Genesis SDK
£60	G2 to Genesis Professional
£740	G2 to Genesis SDK
£680	G Professional to Genesis SDK

Site licence upgrades - multiply by 2. To upgrade, send your Genesis Editor disc, or a copy of your site licence as proof of purchase.

Software prices include postage and packing but not VAT.

Site licences cost four times the single user price.

Curriculum Support

Ancient Egypt

£45 (site) v1.00 Arc/PC

A multimedia application aimed at History Key Stage 2. Graphics and animation bring the world of ancient Egypt vividly to life. Supplied with two reading levels and supported by a pack of photocopiable worksheets. Extra discs of graphics (drawfiles and sprites for Acorn, .AFF, ie OakDraw compatible and bitmaps for the PC) are also available as a separate product.

IT in the Real World

£30 (site) v1.00 Arc

This is a package designed to help the non-IT specialist teacher co-ordinate children's own investigation of the Applications and Effects of IT in real life situations. All text may be saved out to be used in a word processor or DTP package as the basis for pupils' own writing. There is a large pack of photocopiable paper resources, including notes and exercises. Covers Key stage 3, levels 3 to 8.

Battle of the Somme

£45/£90 with laser disc v1.01 Arc

This multimedia application uses authentic film (on Laserdisc), shot on the battlefield, and recorded interviews as well as maps, graphics and database to give an unrivalled insight into the world of 1916, on the home as well as the western front. (Laservision player not essential.)

Castle Life

£45 (site) v1.00 Arc/PC

This allows children to investigate life in a medieval castle, finding their own routes or following suggestions in the accompanying worksheets. Colourful screens with graphics and animation.

CD Français

£95 v1.03 Arc

Over 50 interactive French activities use high quality CD sound combined with ingenious on-screen problem solving activities. Based on the popular Tricolore course (book 4), addresses listening, reading and writing. CD-ROM drive required.

Goldilocks (CD)

£40 v1.01 Arc

A colourful and interactive exploration to introduce IT skills in the early years. Explore the house of the bears, record what you find using graphics and the keyboard overlays supplied. Brought to life with high quality sound from CD ROM player. Includes an extensive pack of photocopiable paper materials.

Investigating Local Industry

£95 (site) v1.00 Arc

With over 500 screens, many databases and timelines this is an outstanding guide to the Industrial Revolution. The application provides 'guided tours' through many aspects of history, social and industrial as well as political. It also makes it easy for the user to follow an individual line of enquiry, moving freely between topics and databases.

Letters

£45 (site) v2.02 Arc

A delightful guide to recognising and writing the letters of the alphabet. Each letter has sound and animation resources to reinforce its correct formation. 'I Spy' and memory games help to reinforce the connection between letters and the initial sounds of words.

Cistercian Abbeys

£45 (site) v1.01 Arc

This application is designed to support school visits to medieval sites, acting as a stimulus before the visit and a resource after it. It uses graphics, plans, maps and a database with over 200 entries to explore medieval monastic life. Pupils can make their own exploration, follow the cycle of a medieval monk's day or use suggestions for investigation from the accompanying pack of worksheets. A CD sound option allows appropriate music to be played through loudspeakers or headphones. (CD available separately from record shops).

Oak Solutions Tel: 0113 232 6992 Fax: 0113 232 6993

Primary Nature

£45 (site) v1.00 Arc

Three multimedia applications for the price of one. With Hedgerows, Pond Life and Food Chains, pupils are encouraged to explore the natural world using a variety of techniques. The applications are accompanied by a large pack of photocopiable worksheets.

Saxon Life

£45 (site) v1.00 Arc/PC

This multimedia application offers a wealth of detail on life in the Dark Ages. Suitable for Key Stage 2, it covers the history of the Saxon invasion of Britain and war and peace in the Anglo-Saxon world. The application is accompanied by a large pack of worksheets

Viking Invaders

£45 (site) v1.00 Arc/PC

Key Stage 2 pupils can discover how Vikings lived, travelled and fought. The application relates this far off time to the present day by examining the Viking heritage in modern Britain. It shows that the craftsmanship and literature of the Vikings entitle them to be seen as far more than mere raiders.

Information

Utilities

Archimedes BASIC Compiler

£70 v3.10 Arc

ABC version 3. Compiles BBC BASIC to produce fast efficient ARM code. Compiles in background on the desktop. Produces stand alone applications and relocatable modules. Library modules can be created to share code between applications. Widely used to compile professional applications (e.g. Genesis Professional, AUN Level 4 and many more).

Ace ProDrivers

£35 (£80 site) v0.33 Arc

24 bit RISC OS 3 drivers for printers not supported by Acorn's !Printers (Canon LBP, ESC P2). High quality colour output on colour printers. Colour separations facility useful for HP 500C, to save ink and achieve higher quality black and grey output in colour images. Monochrome printers can take advantage of background printing via spooler and colour separation facility.

Ace Standard Printer Drivers

£15 (£40 site) Arc

Standard 8 bit printer drivers for a wide range of printers.

Cambridge Pascal

£70 v1.00 Arc

ISO standard Pascal compiler with many extensions such as full string and error handling. The compiler runs under the RISC OS desktop and supports conditional compilation, include files and compilation to relocatable modules. Library support for RISC OS and Archimedes WIMP.

Draw Print & Plot *NEW*

£30 v1.51/1.28 Arc

Print drawfiles up to A0 on to many sheets of A4 with crop marks. Plot drawfiles to HPGL, Graphtec or Plotmate compatible plotters and to Roland CAMM series cutters and engravers. Ideal method of creating CAD style output on a variety of output devices without recourse to complicated and expensive software.

Repro *NEW*

£50 v1.00 Arc

Printer palette editor to help you get the best from your colour printer. Edits printer palette files to allow comprehensive control over the way colours are output to paper, including control over dot patterns and mapping functions. Works with Acorn's !Printers version 1.22 onwards.

Software prices include postage and packing but not VAT.

Site licences cost four times the single user price.

Design Processor

Release III



Design Processor is the most comprehensive and powerful IT resource for Design & Technology. Designed in conjunction with the NAAIDT, teachers and advisory teachers, it provides a comprehensive range of CAD systems coupled with a huge database of resource material.

The system is integrated to provide a consistent design environment across all areas, and outputs to a wide range of printers, plotters and CAM machinery.

At the heart of Design Processor is its database. The database gives access to the different areas at a variety of levels.

Each area contains design tools which can be used in a completely open ended way to allow new designs to be created from scratch.

Alternatively, the design tools may be accessed via a resource database to allow designs to be assembled from pre-defined components (for example, an electronic circuit or a kitchen may be designed by referencing components in the database, sourced from popular manufacturers catalogues).

Designs generated from the resource databases can readily be converted into other related formats - a system block diagram can be automatically converted to a schematic or PCB layout, or a plan view of a living room layout can be converted to a 3D perspective view and a fly-through animation generated.

Project areas give a gentle introduction to Design Processor with the guarantee of a successful outcome.

The Information areas form a reference section to allow the subjects to be researched and, as with all other areas of Design Processor, the information can be readily transferred to other applications for inclusion in project documentation and worksheets.

Areas covered

- ❑ Electronics
- ❑ Food
- ❑ Materials
- ❑ Pneumatics
- ❑ Environments
- ❑ Mechanisms
- ❑ Packaging
- ❑ 2D and 3D CAD

Applications include

- ❑ Analyser
- ❑ Builder
- ❑ DrawPrint
- ❑ Euclid
- ❑ Logic
- ❑ OakPCB II
- ❑ PDTView
- ❑ Projector
- ❑ Apollonius PDT
- ❑ DrawPlot
- ❑ ECView
- ❑ Genesis Professional
- ❑ OakChart
- ❑ PCBDrill
- ❑ Pneumatic
- ❑ ResColour

Design Processor runs on Acorn RISC OS computers. The full system requires a machine with a hard disc or fast network, 2Mb of RAM and RISC OS 3 or greater. Individual applications may be saved and run on machines with a lower specification.

Design Processor costs £1200 and includes a site licence for all applications (worth over £4000). The cost may be spread over three years if required.

OAK SOLUTIONS

Oak Solutions Ltd Dial House Chapel Street Halton Leeds LS15 7RN Tel: 01132 326992 Fax: 01132 326993



Not such a long time ago in a galaxy not so far away... it's the kind of compulsory dialogue you'd expect to hear at the beginning of a sci-fi movie. Well digital video wasn't far from science fiction all that long ago in our particular corner of the Milky Way.

Today we are at the dawn of a new era (sounds desperately like something from a film trailer voiced over by someone deep and husky; James Earl Jones, perhaps?). This era, however, has little to do with MPExpensive or MPExpensive II decompression hardware; it will be a time when VGA or even broadcast quality video will be viewed by over 40 million home computer owners at no extra cost. And it's all down to this little algorithm mustered up originally on the Acorn platform by a an equally little company called Eidos.

The most basic idea behind the mechanics of digital video is to crush massive amounts of data into a form that can be decoded by the computer. But things aren't

Jack Kreindler examines a serious rival to the MPEG standard for video compression and Stephen Streater, MD of Eidos, explains how Acorn fares against other platforms.

Making movies

quite as simple as they might appear, as today's computer displays are no longer measured in hundreds of pixels and tens of colours – now it's thousands and millions respectively.

Hardware versus software

Basically, users are far more demanding than before and digital video image quality is of paramount importance to the medium's acceptability. High quality, high-resolution video needs to be crushed to such an extent that practically all the algorithms currently used for digital video require extra hardware to decompress the data.

This creates a number of limitations. Firstly, not everyone who has, say, a CD-ROM player will necessarily know about or be able to afford something like a Computer Concepts Movie Magic MPEG decompression board. Additionally, once 'set in stone', the hardware decompression silicon cannot be changed until new standards have been agreed upon and Version 2.0 is released. These very problems were the ones that effectively laid down the gauntlet for companies such as Eidos and a handful of other research groups.

Eidos developed an algorithm using code which inherently is far more efficient than those whose speed deficiencies are buffered by their reliance on extra, dedicated hardware, just as MPEG's algorithm is. The Eidos algorithm – or 'codec' as it is officially termed – is so efficient that the same quality of video can be achieved through decompression from a single-speed CD-ROM, as is typical of a standard MPEG 1 setup, but in software.

In fact, on a 16-bit CIF resolution (352x288) output on a Power Mac, Eidos could generate imagery at no less than 12 times the number of frames per second necessary. Bear in mind that future Acorn machines with a five co-processor upgrade for around £500 could be twice as fast as the fastest Power PC, and you are talking about seriously fast decompression. Alternatively, you could think of it from the point of view of slower decompression from higher resolution imagery, even up to broadcast quality from a highly clocked single-chip ARM700. These claims from Eidos are as yet unproven, but present development demonstrations have shown that this could very well become reality in the next twelve months.

Though broadcast-quality compression and decompression will be only for the highest end systems – at least for the near future – the central processor required to give you and me MPEG 1 quality *sans* Reel

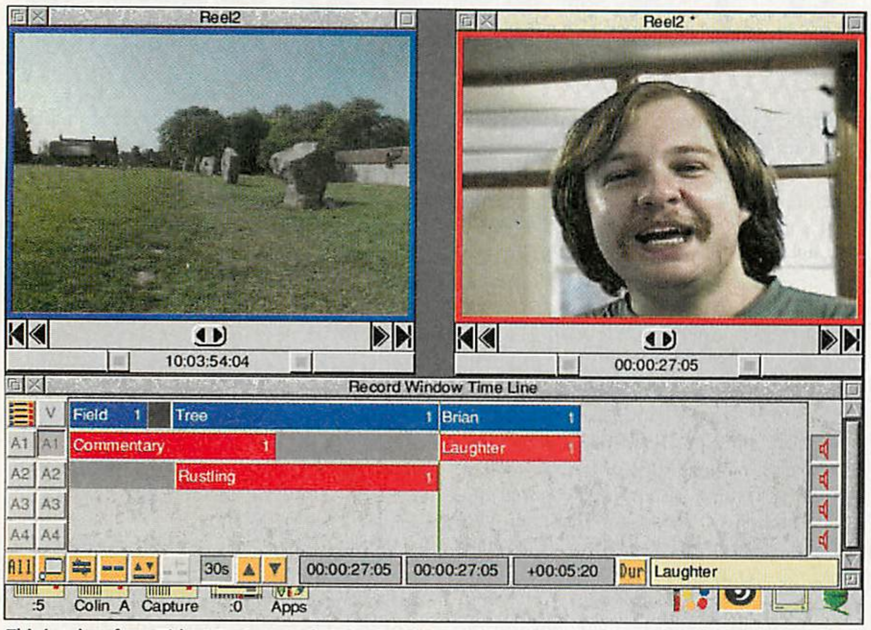


Mike Copperwhite of Eidos sitting in the Eidos 'video corner'. He is working at a Risc PC fitted with an ARM710 chip and an Apex digitiser, which will capture and compress 25 frames of VHS resolution video in real time. Envious? We are.

Magic/Movie Magic cards need only be an ARM700, a 66-MHz 486 or a Power PC.

It might sound blasé to say that only this level of processing muscle is required on your motherboard, but it is becoming quite a rarity for new computer buyers to end up with anything lower in spec than a 30-40 MIPs machine, nowadays. Already, 40-50 million so-called 'target' machines, which are capable of decoding MPEG 1 resolution Eidos-compressed video, are sitting on desktops worldwide – a figure many orders of magnitude larger than those computers with MPEG cards fitted. Because the code can run in software, just like software MPEG, Eidos can run on sub-spec machines but at a smaller scale and with slower frame rates. Unlike software MPEG, you don't get postage stamp-sized images with pixels the size of sugar cubes in the corner of your monitor.

A great advantage of a software codec is that the code can grow ever more efficient in time, as opposed to becoming a redundant development like a hardware-encoded algorithm. It's not that easy just to upgrade a chip each time a revision is completed. Present developments include compression artifact removal, increased decompression efficiency to allow for higher quality image generation and – coupled to this – an improvement in compression, something that is very important when considering a global market full of single speed CD-ROM owners. All these improvements will be an automatic upgrade from the last version, without the user having to sift through page upon page of computer magazines to try and find the cheapest deal on a brand new all singing, all dancing hardware upgrade.



This is taken from Eidos' *Optima* professional real-time video editing software. The cut down version called *Eidoscope* is a good £3350 cheaper at £150.

Efficient and small

In the near-future Eidos envisages what it has coined the 'self-playing Video CD'. Its decompression codec is not only vey efficient, but also very small indeed – 8K in total. Therefore, the entire information required for decompressing Eidos-crunched video from a CD can be tagged at the beginning of the disc and loaded into the computer on bootup. Once loaded, the decompression software will tell the computer exactly what to do and – hey presto – the CD plays itself.

An interesting aspect to this is that more than one codec catering for a range of platforms could be stored on the CD so enabling the same video disc, game or whatever tickles your fancy to be viewed on any computer platform, providing that the little chunk of decompression code has been supplied.

Focussing on the efficiency aspect of the Eidos codec, a broad range of markets could benefit greatly. The games, Video CD and interactive Video CD worlds are continuously looking at how to better crush their video. MPEG-compatible games have not really taken off in as big a way as many expected. This is primarily due to quality of output, and games manufacturers are in many ways limited by the MPEG standard, both in terms of the quality and production costs. A very good MPEG 1 compression system can cost as much as £50,000.

In the potentially huge and lucrative market of computer games, Eidos has a significant advantage over MPEG for both video and games producers and users alike. The former will benefit from cost-effective alternatives to comparable MPEG compression suites, and the end user will not have to buy an MPExpensive card to play his digital video adventures and golf-simulators.

Those dreaded industry standards

Cost-effectiveness is something that amateur and professional film producers constantly consider. Eidos has been used for some time to doing real-time compression of video sources using Millipede Graphics graphics hardware. With its ability to compress images in real time, at a quality matched only by 'industry standard' systems like those offered by Avid costing ten times as much, you begin to wonder whether the film producer is left with any choice but to go for an Eidos system.

But here lies the problem. It is all well and good to be able to buy an entire editing system for your VHS, SVHS, BetaCam or Hi8 video equipment for less money than it would cost to hire a professional suite for a week or so, but Eidos is up against ingrained industry standards. I wouldn't

say it could be likened to Betamax video trying to infiltrate the inferior VHS market, but it's close.

Eidos is a wonderful technology, and it is great to know that this world-leading software was born on the Acorn platform, but the only thing that will prevent Eidos from becomming the success that it could well become is that technology sells far less well than products. Potential Eidos products, from armchair video on demand on aircraft and video telephones using the incredibly efficient ARM chip and Eidos software, right through to broadcast quality movie making and Video CD, are all on the cards. I feel as if this technology is somewhat ahead of its time, though in other ways it could have missed the boat with, for example, Video CD already monopolised by MPEG.

Only the great, wise ones can know what the future has in store (now that's a classic line for the end of a movie), but for the time being, Eidos remains one of the most exciting and intriguing unknown quantities in our particular corner of the Milky Way.

Jack Kreindler

The speed of different platforms

A lot of discussion has been taking place on the Internet recently, comparing the relative performance of various high-end computer platforms. At Eidos, we are working on the leading platforms including Acorn, Apple and Intel, and have first-hand experience of the advantages and disadvantages of each.

Thumper for the Risc PC is designed to capture and compress MPEG 1 resolution video at full PAL frame rate in real time, and runs on the Apex board from Millipede. This video quality is now the minimum specification required in the professional editing market. The Apex board, which has an ARM chip on it, is currently the best digitiser for our needs on any platform. The Power Mac AV could only manage to capture a few frames per second, like an Acorn machine with a low cost digitiser.

The IBM compatibles have a wide range of incompatible buses. The ISA and EISA buses are too slow, and VESA local bus and PCI digitisers are not readily available. Most American computers support NTSC initially, and Europe uses the PAL standard.

Playback

Playback is much easier than recording, and systems are much cheaper. The architecture of the various platforms has as much effect on performance as plain processor power.

The Acorn machines have very good video performance, with memory-mapped video. This means that even a 30MHz ARM610 can play back most videos at a CIF/MPEG 1 resolution (352 by 288 pixels). The video chip also supports up to eight channels of sound, which can be mixed in hardware. The write-back buffer on the ARM610 and ARM710 allows screen updating to happen while other pixels are being decompressed – essentially parallel processing.

The IBM-compatible machines can be divided into hundreds of different groups, all incompatible and behaving differently. Below, I outline some of the differences between compatibles, and how this relates to video performance:

- Local bus/PCI video: this is necessary for reasonable video performance, and those without local bus video (basically those designed before 1993) do not allow the pixels on the screen to be updated fast enough. CIF at 25fps requires about 2,500,000 pixels to be updated per second, and either local bus or PCI is necessary.
- Processor: the 33MHz 486 is the minimum viable specification for video on an IBM compatible.
- Operating systems: even ignoring OS/2 and the various flavours of PC UNIX, we have DOS, Windows 3.11 and Windows 95 at the very least.
- Screen access: DOS has no consistent way of accessing the screen in high resolution graphics modes, so the video playback must be written and tested separately on every type of graphics card. Without all of these versions, no one will buy the playback, because it 'doesn't work on IBM compatibles.' Windows 3.11 allows a consistent screen to be presented to the application, at the expense of a slow conversion at display time. Although many people find this hard to believe, Windows 3.11 is only a 16-bit operating system, having been designed to run on a 286 processor.

Our video works at 12.5 frames per second on a 33MHz 486 and a 66MHz 486, with 25fps possible only on a 90MHz Pentium by making the code less portable. Windows 95 is a 32-bit OS and will support DCI video. Intel and Microsoft are saying that this will double the performance of software playback. Our target on a 33MHz 486 with Windows 95 and DCI drivers is 25fps at 320 by 240 pixels, with correspondingly higher resolution on DX2, DX4 or Pentium machines.

The Power Mac machines are a bit like Acorn machines, but much more expensive and – currently – faster. The Eidos codec, when converted to C and run on a Power Mac, will play back 320 by 256 pixel videos at 15bpp at around ten times faster than real time.

The Power PC assembler version is about 15-20 times faster than real time. This translates to real-time software decompression and display of 640 by 480 pixel resolution images at 30fps and 24bpp – MPEG 2 quality completely in software.

The future

Acorn, encouraged by the sales of Risc PCs, has renewed its strategy of innovation. Soon, the Risc PC will be upgradable to a six processor machine allowing, for example, a 486 and five ARM processors to be included at the same time. With the low pound per MIPs rating of ARM chips, this is a cheap route to high performance. As video code can easily be parallelised, we expect to double the performance of the Power Mac with this upgrade at least. Our 80MHz Power Mac – which cost £5000 – will be rendered out of date by a Risc PC upgrade costing a few hundred pounds.

Stephen B Streater
Managing director, Eidos



Brian Brunswick working on a Risc PC. The Eidos codec is cross-platform compatible, and will also run on the Power Mac in the foreground, but Brian knows which machine he'd rather use.

Product details

Product: Eidoscope
Supplier: Eidos
Tel: 0181-941 7899
Price: £169 + VAT

BETT '95

Geoff Preston, Acorn User's Education Editor, previews the products on sale at this year's BETT Show.

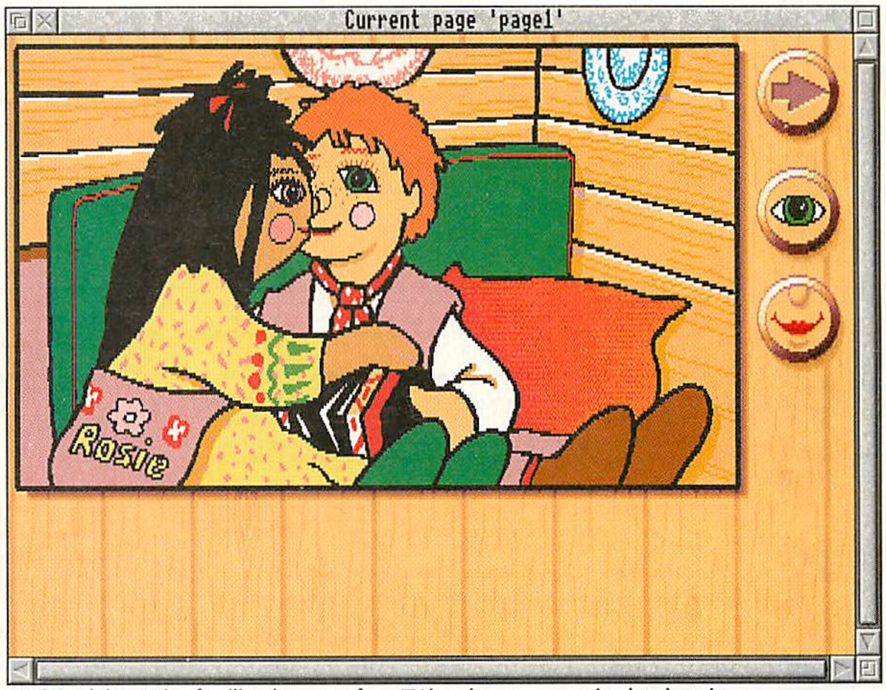
If you are an Information Technology co-ordinator and are looking for some hardware or software to help deliver the National Curriculum, the BETT Show in the National Hall, Olympia on 11 – 14 January is the place to be.

There will be a great deal of talk at BETT about the new National Curriculum Orders and what will be needed to address them. Here are some of my choices.

Generic software

I *still* believe most of the IT targets can be addressed with just five programs: a word processor/DTP package, a spreadsheet, a database, a graphing program and a control program such as *Logo*. There isn't just one of each program type which will be wholly suitable for all ages, so I've chosen one collection for KS 1/2 and another for KS 3/4.

Before offering my suggestions, a word about the future. Acorn networks are becoming essential rather than desirable. Some software does not work well on a network because of the large amount of disc activity involved. This is particularly true of some databases which are decidedly network unfriendly. When considering major programs, think about their performance across a network and don't forget that if you run a program on multiple machines you must have a site licence. Education is not exempt.



Rosie and Jim – Using familiar characters from TV is a clever way to stimulate learning.

Generic software for KS 1/2

For DTP, I don't think you could do better than *1stPage* by Longman Logotron (Stand 261). This is a superb program which is simple to use and offers all the important features of DTP. Apart from fulfilling the requirements of the NC, *1stPage* is remarkably good value for money and should be within the budget of most primary schools.

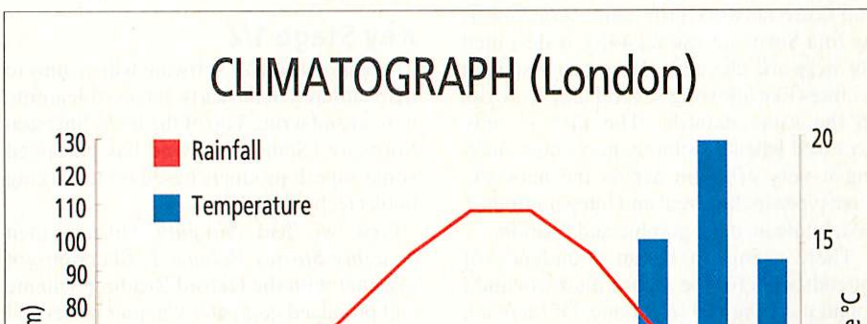
Data handling can be a very stimulating topic but can also be tedious beyond belief. Appian Way Software (Stand 132) has just launched *1st Find It!* which is an entirely picture-based data handling program for the very young. This program is sure to be very successful with KS 1 pupils who could use the program even if they cannot read.

DataSweet2 by Kudlian Soft (Stand 430) is an integrated suite combining spreadsheet, database and graphing. Again, this is a simple program that offers all the features needed for KS 2 Information Technology.

Logo is not my favourite program, but with the right introduction it can be highly motivating. Of all the versions around, *Almost Logo*, by the Advisory Unit (Stand 500), is my favourite. It works within the desktop and all the usual features are included, making this program suitable for KS 1 and 2 certainly, and probably KS 3 also.

Generic software for KS 3/4

For serious DTP, take a good look at *Impression Style* by Computer Concepts (Stand 351) which will easily fulfil not



When will someone write a graphing program to do climatograph like this?

	Communicating and Handling Information	Using IT to Investigate
Programme of Study KS1	☐ • generate and communicate their ideas in different forms, using text, tables, pictures and sound; ☐ • enter and store information; ☐ • retrieve, process and display information that has been stored.	☐ • recognise that control is integral to many everyday devices; ☐ • give direct signals or commands that produce a variety of outcomes, and describe the effects of their actions; ☐ • use IT based models or simulations to explore aspects of real and imaginary situations.
Programme of Study KS2	☐ • use IT equipment and software to communicate ideas and information in a variety of forms, incorporating text, graphs, pictures and sound, as appropriate, showing sensitivity to the needs of their audience; ☐ • use IT equipment and software organise, reorganise and analyse ideas and information; ☐ • select suitable information and media and classify and prepare information for processing with IT, checking for accuracy; ☐ • interpret, analyse and check the plausibility of information held on IT systems, and select the elements required for particular purposes, considering the consequences of any errors.	☐ • create, test, modify and store sequences of instructions to control events; ☐ • use IT equipment and software to monitor external events; ☐ • explore the effect of changing variables in simulations and similar packages, to ask and answer questions of the 'What would happen if...?' type; ☐ • recognise patterns and relationships in the results obtained from IT-based models or simulations, predicting the outcomes of different decisions that could be made.
Programme of Study KS3	☐ • use a range of IT eqipment and software efficiently to create good quality presentations for particular audiences, integrating several forms of information; ☐ • select appropriate IT equipment applications to fulfil their specific purpoes; ☐ • be systematic in their use of appropriate search methods to obtain accurate and relevant information from a range of sources; ☐ • collect and amend quantitive and qualitive information for a particular purpose, and enter it into a data handling package for processing and analysis; ☐ • interpret, analyse and display information, checking its accuracy and questioning its plausibility.	☐ • plan, develop, test and modify sets of instructions and procedures to control events; ☐ • use a system that responds to data from sensors and explain how it makes use of feedback; ☐ • use IT equipment and software to measure and record physical variables; ☐ • explore a given model with a number of variables and create models of their own, in order to detect patterns and relationships; ☐ • modify the rules and data of a model, and predict the effects of such changes; ☐ • evaluate a computer model by comparing its behaviour with other data gathered from a range of sources.
Programme of Study KS4	☐ • use IT to handle and communicate information in a variety of contexts; ☐ • use IT to enhance their own learning and the quality of their work; ☐ • increase their understanding of the social, ethical, moral and economic impact of technology on their lives; ☐ • analyse the requirements of a specific task, taking into account the information required and the purpose for which it is needed, and decide how the information will be presented and interpreted.	☐ • apply their existing knowledge and understanding of measurement, control and modelling to a wide variety of contexts, in a range of subject or vocational areas; ☐ • understand the uses, advantages and disadvantages of particular modelling tequniques.

A check list to help choose software needed to deliver the National Curriculum.

only the DTP requirements of your students, but also of the whole school. *Impression Publisher* and *Publisher Plus* would probably not be required for most school work, although it might be worth having a stand-alone version of one of them for the odd occasion.

Databases are often disc intensive and can cause network problems. *DataPower*, by Iota Software (Stand 445), is designed for network use and offers some special features like allowing several users to write to the same datafile. The disc is only accessed when absolutely necessary, making it very efficient across the network. Data types include real and integer number, text, boolean, date, graphic and formula.

There seems to be an abundance of spreadsheets for the Acorn platform and I found it difficult to select one. Of them all, I would suggest *Eureka* by Longman Logotron (Stand 261) or *Schema2* by Clares (Stand 410); both are very capable. In contrast, I have yet to find a graphing program with which I am totally satisfied. *Graphbox* by Minerva (Stand 428) and *Presenter GTi* by Lindis International (Stand 418) will both provide all the required features – except one. When will a graphing program be produced which will output climatographs? For the uninitiated a climatograph is a line graph showing annual temperature overlaid on a bar graph showing annual rainfall for location.

Content-specific software

I said generic software could probably fulfil all of the requirements of the new orders, but I didn't say this is necessarily how it should be done. In fact this approach is far from ideal as students would certainly miss out on some excellent software which would give them a far broader experience.

Key Stage 1/2

There is a wealth of software which aims to help children in the early stages of learning to read and write. Top of the list is Sherston Software (Stand 264) who has produced some superb products based on its talking books technology.

First we had *Naughty Stories*, then *Naughty Stories Volume 2*. Sherston got together with the Oxford Reading Scheme and produced computer versions of several of its books. Next came two *Rosie and Jim* stories based on the very popular TV series, and now we have *Talking Topics* which are mini encyclopedias for the very young. The latest offering is the *Talking Animated Alphabet* which is being launched at the show.

4Mation (Stand 376) has several adventure programs. Primary teachers looking for resources for history lessons on the Elizabethan period should look at *Betsi*. Betsi is a dog who got the sack from the Royal Palace and was forced to wander the streets. The user follows her around Elizabethan London, so getting an insight into life at that time. Look out also for *A Mouse in Holland* and *Flossy the Frog* from the same company.

Key Stage 3/4

As an alternative to the ubiquitous *Logo*, go to CSH (Stand 313) and look at *Complete Control*. This is a control package that doesn't require any hardware. The simulation includes a control language which allows the user to write instructions to control 'lights' and 'motors'.

One of the most versatile programs for languages is *Linguatext* from Hampshire Microtechnology Centre (Stand 447). The language teacher types a piece of text into *Edit* and then drags it into the converter which encrypts it, thus preventing prying eyes looking up the answers. There are ten different exercises including cloze text, prophesy and filling in the missing letters.

Hardware

For measurement, Philip Harris Education (Stand 363) has got it sewn up with its interface and sensors. These items should be bought jointly by Science and Humanities and can be used on field trips as well as in the labs. Results can be recorded and stored in the interfaces and then transferred into an Archimedes via a serial lead. The readings can then be fed into any number of programs for analysis. AU

Totally connected

Geoff Preston looks at the trials and tribulations of installing a large site-wide network.



ADAM COOTES

The installation of a network represents a significant investment and could easily consume a large percentage of any budget. Presumably, this job is to only be done once and therefore needs to be right first time. Networking a dozen computers is easy and can be done by the average computer-literate individual. On that basis, it's easy to be mistakenly led into thinking that a larger network is effectively the same job with more computers.

If you're planning anything larger than 20 computers in a single room, you really must call in the professionals, for two reasons. Firstly, the sheer distances between computers on a large site can lead to computer stations not being seen and the whole network grinding to halt. Secondly, anyone who installs a network of, say, ten stations will soon recognise the very real advantages that the system offers and will want to expand it, first to 12, then 20, then another room, then another building. If an expansion plan is not considered before the first cable is laid then trouble is just around the corner. To fully understand what is available, and the limitations of what can be achieved, you must call in the experts.

That is exactly what Whitefield School in the London Borough of Barnet did when it decided to install a school-wide network. Whitefield is a large secondary school on the edge of Barnet near Brent Cross Shopping Centre and has about 1100 students.

The school underwent considerable expansion and refurbishment and now comprises two separate blocks – a new technology block and a refurbished old school building linked by a single covered walkway at first floor level. They had about 40 standalone Acorn computers, half of which were situated in the Information Technology room while the rest were distributed in other departments. The Technology Block houses the new Information Technology suite as well as Technology, Drama, and Music.

The school wanted all rooms to have two or three computers and began looking at the various options. Deputy Head, Peter Blenkinsop, has been a keen Acorn man ever since buying an Acorn Atom many years ago, but he looked at the other possibilities. They had a Nimbus network which was a continuing source of annoyance, especially after all support was withdrawn from RM. An IBM network was ridiculously expensive and there was some uncertainty as to whether Apple was going to remain in the education market. Really, the competition offered no competition, so at this point Peter called in Beebug to discuss networking.

Beebug networking

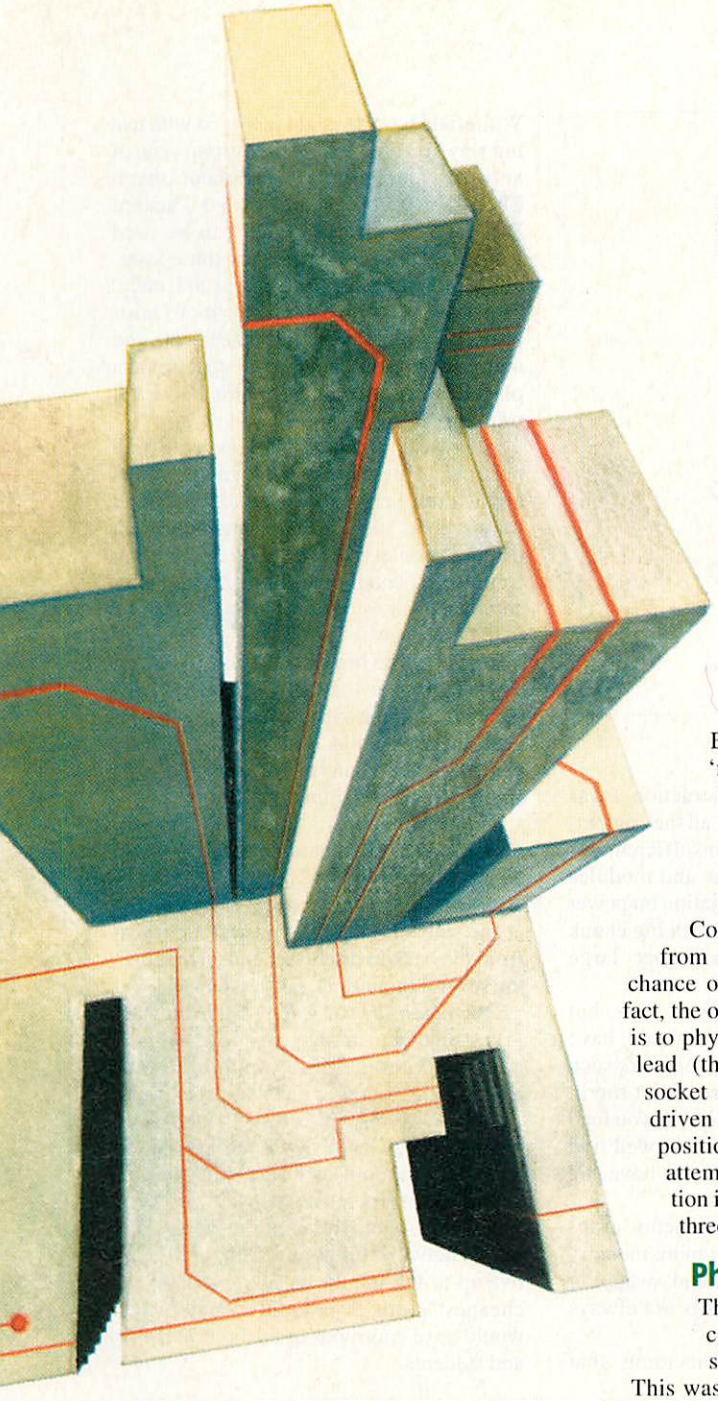
Beebug is a company that has been around for almost as long as Acorn. Those of us who have been involved with Acorn computers since the early days of the BBC will doubtless be aware of its existence, initially in a little shop off Holywell Hill in St Albans. Beebug has an enviable reputation for producing quality software at a reasonable price. It has also been involved in producing hardware, and last year launched its own Ethernet cards for the entire range of Acorn computers. In the last 12 months it installed about 25 major networks and countless smaller ones.

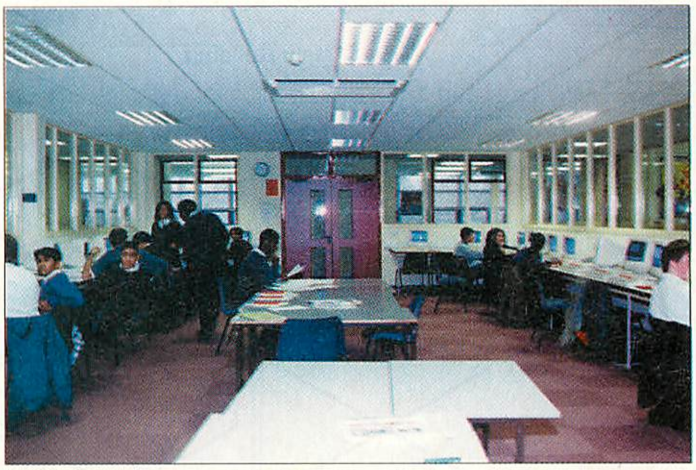
After mulling over the proposals, Beebug made several suggestions as to the best way forward. There are two main standards for network cabling – 10Base2, or Thin Ethernet, and 10BaseT, or Twisted Pair. Beebug decided on 10Base2 because, although the cable is thicker and hence slightly harder to manage, it would use a great deal less cable than 10BaseT. Also, because of the topography of the site, there would have been several places around the network which would have had very large



REGAN

The main fileserver.





REGAN

The Main Computer room in the Technology Block.

bundles of 10BaseT cables which would have been difficult, if not impossible to hide. Even so, the network installed has used about one mile of 10Base2 cable so far.

Another valid point made by Beebug is that the network should not be regarded as one single network, but rather a number of separate linked networks. This decision is partly due to the limitations of 10Base2 but is also a practical consideration, bearing in mind that this is a school. Malicious damage aside, it is a harsh environment and damage to a network cable will result in the network collapsing. If you only have one network then the whole site is out of action. The networks would be on a 'backbone' and fibre optic was considered for this, but that was eventually thought unnecessary and 10Base2 cable was used.

Other issues discussed included how to connect/disconnect computers from the network. The integrity of the network must be maintained at all costs, so Beebug suggested the use of 'make-before-break' wall boxes by Amp. These provide an attractive, although very expensive solution, but they are really the only sensible option. Computers can be removed from the network without any chance of the net being broken. In fact, the only way to crash the system is to physically cut through a drop-lead (the lead between the wall socket and the computer). Partly driven by the school's financial position, it was decided not to attempt to complete the installation in one go but rather in two or three phases.

Phase one

This began by installing the cabling in the incomplete shell of the new building. This was not the ideal scenario one might have imagined. Although the cables could be easily hidden without causing a great deal of damage, the building was, at this stage, a hard-hat area and it took some fairly diplomatic conversations between the builders (who legally owned the building at that point) and Beebug before they were allowed on site.

Once the building was complete, Beebug then went back to install the terminal boxes and connect the network wiring. This part of the network was built before the Risc PC had become available, so the fileservers were three A5000s, although these would be upgraded later.

There are three linked networks in the Technology Block; one serving the IT room on the ground floor, one serving the rest of the ground floor and a third serving the first floor. Each fileserver is fitted with two network cards, one for a network and the other for the backbone – shown in green in the diagram over the page – which connects all the networks. Apart from running the main fileserver software, *Level4*, each also runs *Gateway* which is supplied with the network software pack by Acorn. The three filesevers also double up as gateway stations, allowing users access to the other networks.

In addition, the fileservers are also application servers and use Acorn's application accelerator to distribute programs to client stations. Each fileserver hard disc contains a set of applications for the clients to download. When a station is switched on, it hooks onto the nearest fileserver – the one that doesn't require it to go through a gateway – and downloads the client end of the application server. Most of the software is in place and is delivered efficiently. The main programs used are *Impression Style*, *ArtWorks*, *Eureka* and *Squirrel*.

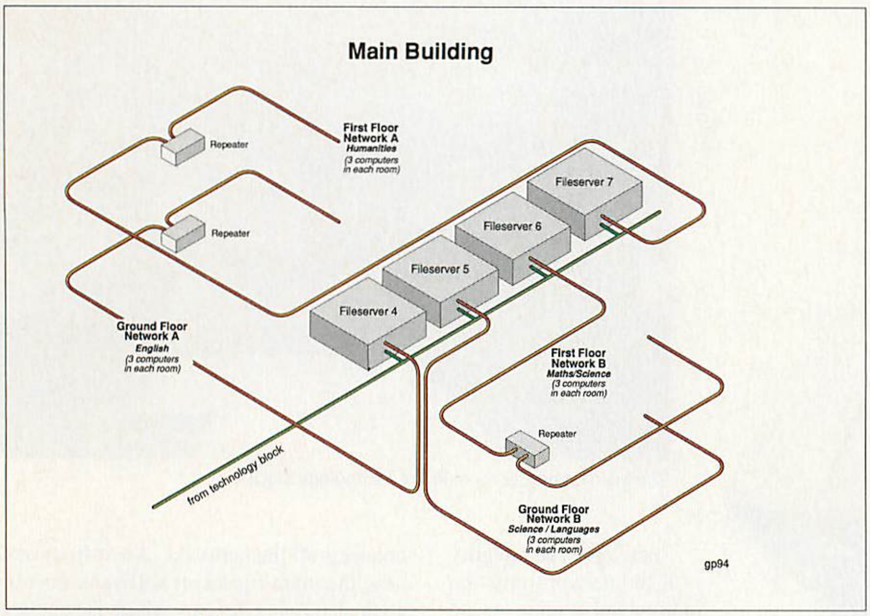
Repeaters were installed in the ground and first floor networks to overcome the two main restrictions imposed by 10Base2 cabling; the total length of cabling must not exceed 180 metres per network section and there should be no more than 30 computers on each section. A repeater, in this context, is rather like an amplifier which boosts the signals. This means that each side of the repeater is a section of network which could be up to 180 metres long with up to 30 computers.

Each classroom on the ground and first floors have two or three network terminals. The computers previously owned by Whitefield are mainly A3020 computers plus a few A4000s and the odd A5000. These were all upgraded by installing a network card and can now access the network. The computer room was equipped with new A3020 computers.

Phase two

The next step was to extend the backbone into the main building. David Spencer of Beebug found this the most frustrating job as it took most of a day for two people to lay a cable over a distance which could be walked in a few seconds. The cable terminates in the centre of the main building on the first floor. Here, there are four file-

GEOFF PRESTON



A schematic diagram of the network in the main building.

servers; two serving the first floor and two serving the ground floor. Again, there are two or three outlets in each room. This was much trickier to install because the cabling had to be hidden so as to be secure, but you can't rip out ceilings to achieve this. Fortunately, large plastic trunking had previously been installed for data lines and this proved very useful indeed.

Phase three

Next came the installation of a separate administration network in the school offices. This comprises eleven stations but this time the server is an ICL Unix machine. The stations are 4Mb A5000s using Acorn's TCP/IP suite and VT220 terminal emulation. But that, as they say, is another story.

What next?

This network is not yet complete as there are plans to build a further Information Technology room with another 24 computers. There will also be a Learning Resource Centre equipped with some IT facilities and several other clusters installed in other learning areas once they have been refurbished.

Beebug's part in the proceedings is now more or less over until the next round of spending, other than to come in to make repairs and carry out any warranty work that may be required. The likelihood of any work needing to be carried out on the wiring is slim, as once in place it just sits there. With over a hundred computers on the system, the potential for faults somewhere on the network is quite large, although to date they have had faults in only two computers. Should the unthinkable happen, Beebug could normally be on site the same day.

There are some aspects that I found curious, but these have more to do with the implementation of the system rather than the original design and construction. I was surprised to find that almost all the computers were 2Mb, which is insufficient for network use. The programs and modules downloaded to each client station on power up take up about 500K. That's a big chunk out of 2048K and means that large programs will complain.

Whitefield chose *Impression Style*, but had it chosen *Publisher* it would have found some difficulties. On a network such as this, *Publisher* would just about run in mode 12 with a 96K font cache. If you load even a small document, you may well find you can't print it, even if you have the space to load a printer driver.

The school is also experiencing problems with *Eureka,* requiring more memory than is normally available and swapping data between two programs is not always possible.

Network printing is something that Whitefield hasn't yet got involved with in a big way, and judging by the current state of network spoolers who can blame them. There are a couple of Hewlett Packard Deskjet 520 printers which can be used from any station and there are three laser-direct printers which can only print locally. The view is to provide some more laser printers which will be placed on the network, and some smaller Deskjet printers placed around the classrooms for local printing.

At present, the fileservers are being used not only as fileservers, but as gateways and application servers. The additional load imposed on them by also making them printer spoolers seems to be asking for trouble, especially as the printer spooler software is notorious for regularly crashing in the biggest way imaginable.

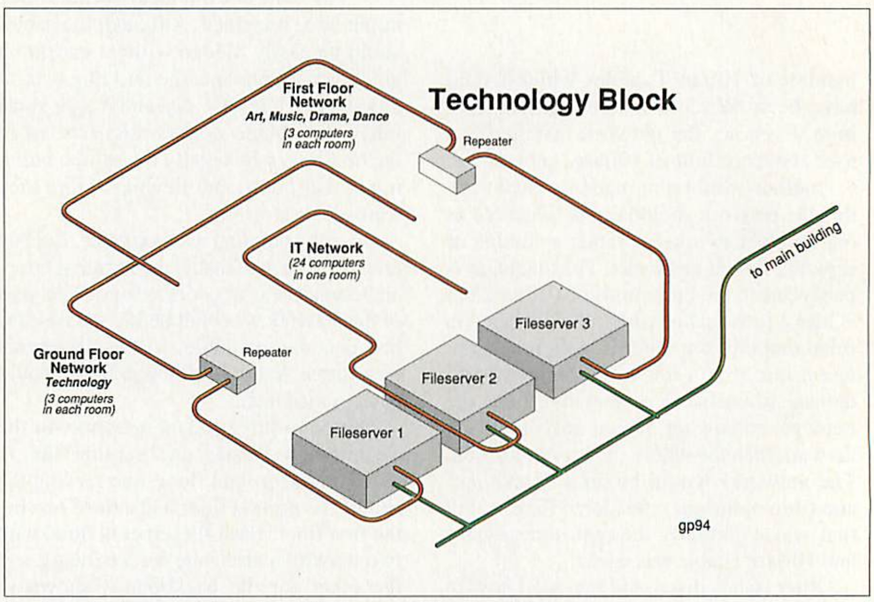
Probably the biggest surprise (or dare I say, shock) was the lack of backup facilities built into the system, and I would suggest the next injection of cash should provide some means of backup along with rigorous backup routines.

A tape streamer is an obvious choice because removable hard discs are easier to cope with in the school situation because, if a student finds they've lost a piece of work at the start of a lesson, you can recover it from the backup disc in seconds rather than the several minutes it takes with tape.

One disc per year group (200 students) gives adequate storage capacity, with the added advantage of being able to take a backup disc home to mark students' work.

On a system such as this, CD-ROM is a must. A six-tower or two would provide an enormous amount of information on this already powerful resource.

Teletext could be running across the whole network for about £250, delivering live up-to-the-minute data but probably the cheapest extra is internal e-mail which would be of enormous use to both staff and students. AU



A schematic diagram of the network in the new Technology Block.

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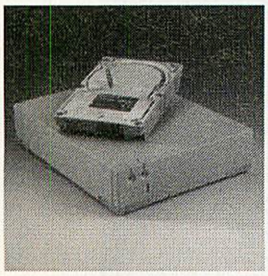
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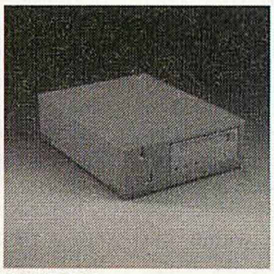


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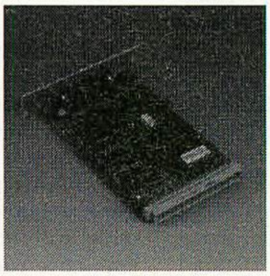
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Letters

Creep not to PC scum

The recent conversion of *ArtWorks* to the PC platform is regrettable. CC's attributing the ceasing in developments of *ArtWorks* on the Acorn platform to the lack of a C++ compiler confuses me – I thought the programmers prided themselves on the fact that they always use pure ARM assembler for all their applications.

Still, bad workmen blame their tools. Perhaps Computer Concepts should take heed of the message hidden within its own name: 'Creep not to PC scum'...

Robert A Birke
Essex

Although it's true that Computer Concepts does take pride in the pure ARM coding of its applications, it seems that the programmers have realised that for any large project, pure ARM coding is masochistic, to say the least.

Besides, CC has always said it could convert *Camelot* (*ArtWorks* for Windows) back to the Acorn platform, if and when a C++ compiler appears for RISC OS. If that isn't a good enough reason to provide such a compiler, then I don't know what is. (MM)



ArtWorks: when it was released, this represented the state of the art as far as drawing technology went on the Acorn platform. Now it's being left behind by its PC sister package, although it's still a very capable package, as this piece of clip art produced using *ArtWorks* shows.

The next train

I am one of your far-from-expert readers, and *Acorn User* has often helped to guide me through the jungle, but I wonder whether others know about the quarterly discs available from Abacus Training, masterminded by Gerald Fitton. I have found them very helpful and informative.

They started as 'PipeLine', a sort of user group for *Pipedream*; the series I buy is 'ZLine' for *Wordz*, *Resultz* and *Fireworkz*. But the content is not limited to these products; there is much of general interest, for example the latest disc includes an interesting hardware item on why it may make sense to spend more on the monitor and printer than the computer itself. Following continued requests from subscribers, he is thinking of starting an 'ILine' disc for users of the *Impression* family.

For those interested, the address is 29 Okus Grove, Upper Stratton, Swindon, Wiltshire SN2 6QA.

E L Killip
Sussex

Pointless letter

I am writing this letter in the vain hope that you print it to complement the other mostly pointless letters which appear in your Letters page. Does it really need a letter from Bryan Clarke to tell us that Dartford is in Kent rather than London.

I also found it hard to believe that a picture was really required to prove to us all that *Impression* doesn't do frame borders as rectangles. I must say that having used *Impression* extensively for a number of years, I have never sat around with a magnifying glass looking at the border joins.

Finally, since you've transferred to the Mac (probably not your favourite subject) why do hyphens keep appearing in the middle of columns for no reason at all? It's very annoying.

So come on *Acorn User*, get your act together and start printing some real letters that have some real point and real relevance to the Acorn market. Perhaps you're short of letters to print, but there's always this one crying out for publication!

John Welkinsaw
Essex

And I'm sure we don't need an irrelevant letter going on at length about that letter. However, the point about Impression borders is important, as anyone who has tried using a border of thickness three will have found out: lines have rounded edges, so underlining using thick lines looks a little odd.

Also, we've hopefully eradicated the hyphen problem: look at the attached Acorn-produced supplement, and see if you can find any. Good old *Impression*. (MM)

Wrong developer

In the November issue of *Acorn User* you included a review of the *Goldilocks* CD-ROM which you attributed to Cumana. *Goldilocks* was, in fact, produced by Advisory Teachers working within the EdIT Centre in Leeds, using *Genesis* from Oak Solutions. The project was part-funded by NCET, and Oak Solutions is the publisher of *Goldilocks* and provided a great deal of support during the program's development.

Cumana is the distributor of *Goldilocks*, and for this we are all very grateful. However Cumana was not connected with the development or production of this CD.

Julie Frankland
Patrick Kirk
Authors of *Goldilocks*

NEC 3xi CD drives

After scouring the pages of *PCW*, I managed to track down the excellent triple spin NEC 3xi CD-ROM drive for £225 + VAT from Novatech on (01705) 664144. The only problem was the lack of a software driver for the drive under CDFS 2.2.

Alsystems – (01420) 561111 – is currently advertising the drive in Acorn magazines for £349 + VAT 'now fully compatible with your Acorn machine'. They are also supplying the driver software alone, but at the unbelievable cost of £100 + VAT (for about 4 or 5K of code). Luckily Castle Technology – (01728) 621222 – is in the 3xi driver market and at the much more realistic price of £25 + VAT. This is still slightly more than I originally expected to pay but compared to

Alsystems is a real bargain.

Dave Lawrence
Canterbury

Sell, sell, sell

I'm not very lucky with Acorn computers. I first bought a BBC B+, and a few months later the Master arrived.

About a year ago, I wanted to buy a new computer. I had to decide between a colourful Amiga or a RISC machine. Loyal as I was, I bought the top model, an A5000, despite the graphic capabilities.

Now Acorn has a really upgradable machine with up-to-date graphics, the Risc PC. To upgrade from an A5000 to a Risc PC shouldn't be too expensive, but great was my disappointment when I contacted my computer store: it seemed my shining A5000 has no more value than an obsolete 286 PC. They'd give me between £200 and £400 for a machine I'd paid £1500 for a year ago.

This can hardly be called an upgrade: no wonder, among existing Archimedes users I know, no one is buying a Risc PC – only those with an A400 can justify such a bargain. Selling the computer privately doesn't work either, as here in Belgium there are only a few Archimedes users and they too want to sell.

If I can't get a decent price for my machine, I'll have to buy myself a real PC, not a risky Acorn. It's cheaper, has more software, and it keeps its value.

Marc Ceelen
Belgium

There's no real answer to this dilemma: whatever the technology you buy, be it a video, a car or a computer, there'll always be something along which makes your investment less valuable.

Compared to most other computer makes, Acorns hold their value pretty well. The problem with the Risc PC's launch is that *all* previous models are now classed as obsolete, and the second-hand market has been flooded. On the other hand, if Mr Ceelen had gone for the other option and bought an Amiga, he'd be in even worse trouble. At least Acorn is still with us, and producing new hardware. (MM)

Congratulations

May I take this opportunity to congratulate three organisations in the Acorn world for developments seen or launched at the excellent Acorn World '94 show.

Firstly, Europress Publications for being the second full-colour magazine publisher to use a Risc PC. I thought it looked good and (sorry) better than some copies of the regular Acorn magazines (*Acorn User* included). Does this development signal the beginning of the end of the Apple domination at Europress?

Secondly, Digital Arts, for introducing a credit software protection scheme for the latest incarnation of *DA's Picture*. This makes it easy to use my copy on two (or more) machines, at home and at work. This leaves those damned CC dongles way behind. Nice one, DA!

Thirdly, Acorn. Yes, congratulations to Acorn. At last it looks as if Acorn is finally going to treat its enthusiasts properly. These Clan Acorn '94 members should be 'used' by Acorn to widen its base of users. What next? A version for professional users, perhaps?

Keith Parker
Middlesex

You'll be glad to know that the supplement on this issue is another Risc PC job, and that in this issue and the Christmas issue of the magazine, the number of pages produced on a Risc PC reached double figures: bet you can't find out which is which – without a magnifying glass, of course.

As for Clan Acorn, it is a good idea. Let's hope Acorn treats its members properly, and doesn't just take the money and forget about it all. Acorn's enthusiasts are easily some of the most genuinely enthusiastic and keen computer users in the world, and deserve Acorn's support. (MM)

Viewpoint

When the news broke that some of the major players in the Acorn marketplace were developing software for the PC marketplace – developers like Computer Concepts, Colton Software and Oak Solutions – the reaction among Acorn users was, predictably, none too chuffed. And there's fair reason: the PC version of *ArtWorks* will have more features than the Acorn version, and that sticks in the throat.

However, there's surely no need to panic. For a start, these companies aren't ditching the Acorn platform, they're just branching out, and if the PC product sells well, it reflects well on the Acorn version – after all, all the products being released by Acorn companies for Windows are conversions of existing Acorn products, and if they sell, that gives the Acorn platform that little bit more PC-compatibility, without having to run Windows. Another side is that the extra income produced by selling the Windows products can only help the Acorn side: the more money a company has, the more it can spend on research and development.

But looking on the down side, what if one of these companies makes so much money out of the PC side that its Acorn profits appear so small as to not be worth the effort? It's hard to say if this will happen, but there are two answers: one, any profit is worth having, however small, and as only the most successful products are being converted, they must be selling well in the Acorn market, and therefore making money; and two, a lot of the converted products are written in C, and as such can be converted reasonably easily between the two platforms. The only fly in the ointment is the lack of an Acorn C++ compiler, which is the main reason for the lack of an *ArtWorks 2* on the Acorn platform; hopefully we don't have long to wait for such a C++ compiler, and indeed, there is a C++ version of *Easy C* available as we speak.

Despite these arguments, some Acorn fans are still disillusioned that companies are moving to other platforms: 'rats leaving a sinking ship' is the predominant feeling. This argument falls down totally when you look at the rest of the market – there are plenty of companies producing highly innovative and top quality products, and they're not looking to the PC market to expand. Take Aleph One, for example. The PC expansion card – the one that takes up a podule space, rather than the extremely late Risc PC card – has been around for a good few years, and has proved popular. Now take a look at the latest issue of *Mac User*: the cover line exclaims how amazing it is that Apple has developed a PC card upgrade for the Power Mac 6100, and that it costs under £500 (not including a copy of Windows). This card contains a PC processor, a SIMM slot for memory, and plugs into the PDS slot in a Power Mac 6100 – but not the 7100 or 8100.

Talk about being behind the times! The Acorn market has moved on to £99 PC upgrades – and the board is in prototype stage as I write this, with availability in the new year – and the entire range of machines (except the A3010) can have a PC card fitted for considerably less than £500. And this is from a company – Aleph One – with very few staff, but immense skill and professionalism. There are plenty of other examples in this market: Eidos (see the feature in this issue) is a relatively small outfit, but it has the potential to beat the world in the video compression stakes; direct drive printing from CC and Calligraph is unique, and the Windows world is only just beginning to work out the benefits; the Risc PC itself is very innovative; *Sibelius 7* is a stunning example of a very small programming team producing a gem; the list goes on. Even RISC OS, which is often criticised for being behind in the operating system stakes, is ahead in areas like drag and drop and printing. When people at Apple Expo saw the Mac's new feature where you can drag a file from disc into an open window to load it, they were stunned. I just laughed.

That's why the migration of some companies to the PC won't hurt Acorn as much as the pessimists think: there are too many gems in this market, and they are what makes it thrive.

Mark Moxon



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GAME SHOW

Happy err.. New Year! Christmas isn't even over yet and already the omniscient and omnipresent Game Show is looking forward to the beginnings of '95. So what will it all contain then? Better games on the Acorn? *Any* games on the Acorn? With all these PC frolics going on is there any point trying to develop games anymore?

The answer is yes – and no. Yes there is a point, because there will be a loyal market and not everyone will have PC power in their Acorns yet; and no, companies shouldn't push anything out unless they are confident, have thought through the marketing and are prepared to present it in an attractive manner. I'm not talking about PD or Shareware here, I'm talking about commercial products.

If developers want Acorn or other industries and retailers to supply development aid or promote products then they must prove that they can come up with the goods. I was dead chuffed wandering around the Acorn World show, as this was exactly what was happening with glossy box art (on some), and really great and inventive games being shown off with pride. There were even some concepts I hadn't seen before, and I've seen a few, let me tell you.

Powerslave, TBA, FedNet, Gamesware, Oregan, and Krisalis: take a bow. The others: watch the above and take notes!



Doom on a PC; but is there any point in converting it now the PC card is nearly upon us?

Letters overload

I get letters you know. In fact I get an awful lot of letters either announcing new products, ticking me off for what I might have said or not said, and more recently telling me how good my reviews are (of course!).

Oh, I also get a few giving me advice over flood insurance, but that, as they say, is another story...

One recent letter arrived from Rome, and instead of offering me a free holiday or all I could eat at Pizzaland, it told me about a product I knew a little about, the *GTAC*. It stands for Graphic Text Adventure Creator and allows an adventure game environment to be set up on the RISC OS desktop. What this development needs is some loving Acorn adoption by a company willing to put it on the market. If you are interested then write in to me for the address to give your sales pitch.

To its credit, the program has been used in the game *Hermes* which was put out by Arch Angel Software and if my memory serves me correctly was pretty good. Andrea, the developer, also suggested several other 'educational' uses.

Flashback solutions

After receiving quite a few requests for my *Flashback* codes I reckon it's time to burden the world with the complete list. Now I know they've been published in other magazines but I've held off to get maximum mileage from the game.

You may have noticed *Flashback* took pride of place on the *Acorn User* challenge at Acorn World, and rightly so; programming guru Dave Lawrence – the man behind the conversion – even popped over to the stand and typed in an obscure code to show you the 'end of game' movie... has the man no morals? Still, all good things come to an end and if you haven't completed it then hang your head in shame and use these codes to good effect.

Normal Mode:
STRUCK
DYNAMO
REDONE
POLISH
BECALM
UNMADE
IGNITE
Expert Mode:
OLIVES
MYRIAD
NEROLI
EERILY
TRUNKS
VERIFY
PSEUDO
And finally; for the ultimate cheat to impress your friends on first picking up the joypad, type PYKNIC.

Steve Atherton

Supplier: Oregan Software Developments
Tel: 0121-353 6044
Price: £24.95



ARCTURUS



Spending just half a page last month on *Arcturus* hardly did the game justice, so here we are in the aftermath of Christmas and it's time to push the old disc drive into gear. As I mentioned last month, the presentation of the game's box is exceptional, and for once you might really think things are on the up in the Acorn games market. Indeed I hope Oregan reaped the benefits from that crowd that was permanently around its stand at the recent Acorn World show.

Arcturus sounds very Latin to me and conjures up the word 'difficulty' in my mind; not that that is a bad thing as many a game needs a grand and important name to sell the product before you even lay eyes on it. So with the word 'difficulty' in mind I popped it in the disc drive and booted up.

Some rather suave and sophisticated intro sequences later, you find yourself in the game zone. Take time to study the manual as there are plenty of helpful hints, both in German and in English. It also pays to master the controls and maybe even take time out for the *Tastaturbelegung* – sounds like something your parents swore would make you blind – so reactions and results are at a premium.

The rules are simple. You must steer a little gyroscope around a preset area and collect all the diamonds that are there. Some are easy to find; others require you to use the map in the top left-hand corner.

The perspective is 3D isometric – that's above just off centre to you and me – and resembles a game called *Marble Madness*, an arcade game that was around about eight years ago, and to a lesser degree *Q-Bert*. The reason I mention *Q-Bert* is because at tricky or fatal places in the gaming area a wrong move can send it all horribly wrong by launching your little friend into the abyss. With all the diamonds to play for it is not surprising that time limits relative to your scoring are imposed. You have to be quick and precise to gain any sort of advantage here.

So, is it 'difficult?' Well, yes and no. The challenge is certainly up to scratch and the graphics back up the impressive box artwork, but I must confess that for some reason the game feels very dated. It's probably due to the resemblance it has with *Marble Madness*, albeit with different gameplay. The first levels are far from difficult, being aimed at co-ordination training more than anything, and you quickly find yourself at ease with the rather nicely shaded environment. This is where the word 'difficult' takes is replaced by 'challenging' and even 'addictive'. It took me several attempts to get as far as I did and even then it was difficult to turn my back on it all.

Guiding the gyro around, you become aware that all is not quite the idyllic gouraud environment you first thought.

Aside from the diamonds to collect, you soon find yourself confronted with different surface properties that can hinder or assist your progress. Mind the ice: trying to turn swiftly around here will put you right over the edge (again). There are also 'jumpfields' which allow the gyro to be projected over gaps in the playing area, though you need a bit of speed to get the desired effect.

Littered throughout the playing areas are also the bad guys which are fellow gyro-type things: some static, some heading right for you. Watch out for the 'wiper' which takes away the playing surface altogether.

At the end of the day, *Arcturus* is an excellent game that oozes confidence and familiarity. Definitely worth buying, and standing up well in the Christmas release list.

Steve Atherton



Supplier: Soft Rock Software
Tel: 0117-949 1634
Price: £3.49



Although this game has been out for over a year now, I got a rather polite letter pointing out that it hasn't been reviewed within the sacred pages of this section.

Soft Rock Software prides itself on something which I must confess I don't wholly approve; that is a budget, cheap approach.

This sort of tactic can be quite damaging to an industry that has trouble being recognised by exterior retail outlets and by the producers of the machine itself.

Not that I am having a go at its products – absolutely not – more at its marketing strategy. If I was going to buy a game I admit I might be tempted by *Floopy*, but the price might make me a tad dubious as to the research, development and so on.

Let's say I bought it. I get it home, I discover the company motto is 'software on a shoestring' and on reading the on-screen instructions I then discover that the programmer has no idea what he has created.

The instructions suggest that perhaps it should all be left to the imagination, describing the main hero as a 'round grey character' or announcing that he has no idea what enemies he has created. Doesn't exactly ooze confidence eh? Still it's cheap. (I think that's the general idea of the company's sales pitch.)



The bottom line is that I am now on a crusade. The Acorn games market is going to hit the fan when PC compatibility becomes widespread, and if anyone still fancies making some money then they will need to be presenting confident, glamorous games that fill the buyer with a sense of achievement. This doesn't take much to do and the benefits are there for everyone.

Anyway, enough of me, and on with *Floopy*. The grey character that you control is placed within a *PacMan*-type environment with three different enemies to take on. These basically move around in a random manner, getting in your way and killing you on contact. You have the same task to achieve in each level, to collect all the icons on the screen. There are three types of screen. or should I say three themes:

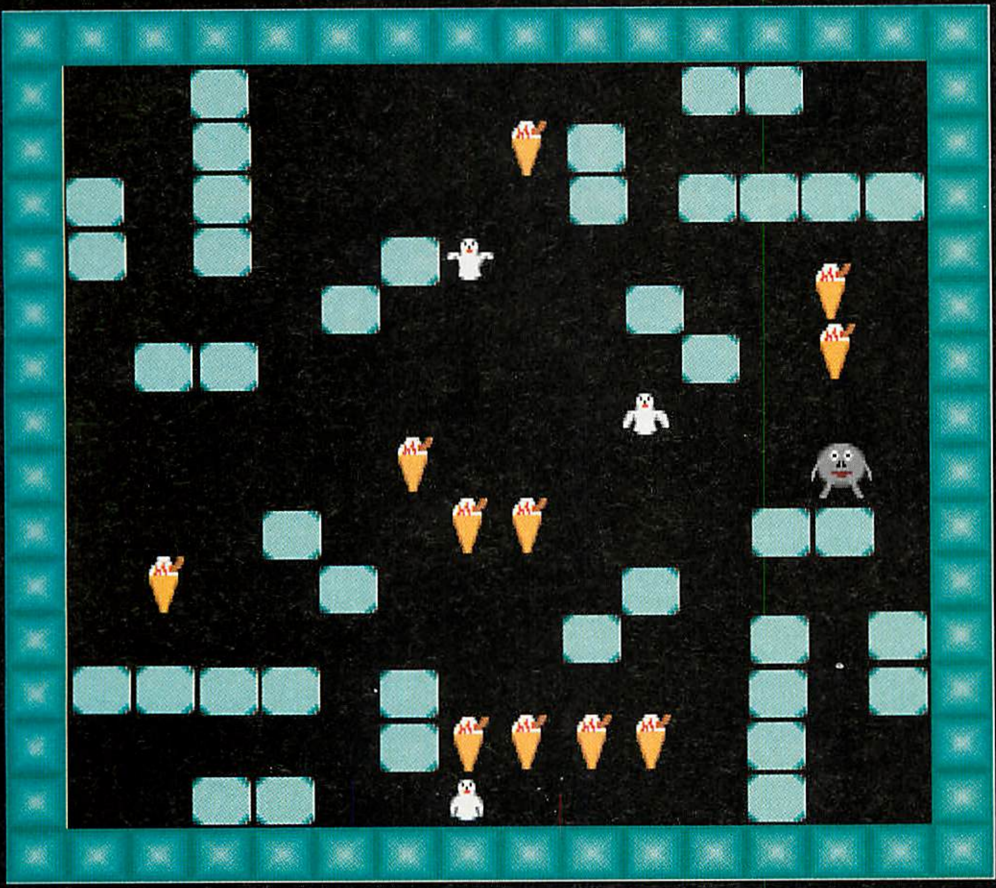
Ice: Wander around the chilly environment avoiding the err.. duck/goose/penguin-type things while collecting ice creams or '99s'.

Apples: Wander around a different coloured playing area avoiding bees while collecting apples. I thought it was wasps that liked fruit...

Helmet: Wander around another coloured field picking up helmets while avoiding hammers.

That's it. Oh, in order to get at some areas you can move some of the scenery out of the way. In the Ice Zone you can move the blocks but if they touch anything else they melt. Again you can move the apple cores in other sections but if they touch anything else then they are put in the bin.





Arrows also litter the floor in some areas and these propel our little friend in the direction it is pointing. Littered too around the general area are some crosses which unfortunately kill you on contact.



Floopy is OK. That's all I can say really as the packaging and general feel of the game lets it all down.

I don't want to sound bitty but a patronising story about a little fella's quest to free his little girlfriend etc. etc. might have swayed me towards giving this a better review. But that, as they say is marketing.

Steve Atherton

Display Area: Click around this playing area to highlight and explore items or areas of interest. The central bar displays the current selection.

Simon: The main character in the plot, Simon, must interact with other people or items to progress. If you leave him too long he takes the little wizard hat off then puts his walkman on, tapping his feet till you get around to doing something.

ID Bar: This is where Simon's actions are constructed and on activation will send the character on his merry way. By selecting a verb, say 'walk to,' then highlighting an object in the Display area you can have Simon approach anyone or anything. Easy.



Inventory: All the items that you might have picked up along your travels are here. Just select what you would like to do with it (Verb Bank) then highlight the item and where you might wish to use it – bingo! You've achieved an interaction.

Verb Bank: Just about every action you could wish for is here and should the conversation get a little complicated the screen quickly reverts to multiple choice. To select a verb simply move the mouse over it then click.

Splitting the playing area up is a central bar which acts as the 'transmitter' of your actions. To transmit something you must first construct a sentence by selecting a verb from the bottom left area then either apply it to what the mouse has discovered or to something from the inventory in the bottom right-hand corner.

SIMON THE SORCERER

Supplier: Gamesware
Tel: (01703) 456523
Price: £39.99

It's here! At last! They've finally let the programmers out of the bunker they've been locked in, and here we have nine, yes *nine* discs packed with graphical delights.

You play Simon, a spotty little youth who, feeling rather bored, rummages through the loft only to find a book of spells.

Discarding the book, the pages fly open and hey presto! Up pops a portal to another dimension. Simon's friendly dog promptly jumps in and the little lad has no choice but to follow suit.

Once you enter the mad world of the game you spot two things: the programmers' sense of humour and just how much detail has been placed into the game. What you have here is a game you can return to again and again without getting bored, with different things to look at each time and maybe even a different approach to the problem.

The main task in the game is to free the wizard Calypso who has gone and got himself kidnapped. Of course, to free a wizard you must become a wizard yourself, and one with a sense of humour at that, so it's off exploring screen after screen learning general wizardry and collecting as many items as you can.

Being mortal puts a different slant on things and there are plenty of ways our plucky hero can be persuaded to die; it's quite hard to do in the end, though, and adds to the game's longevity, making you try out *all* the possible combinations.

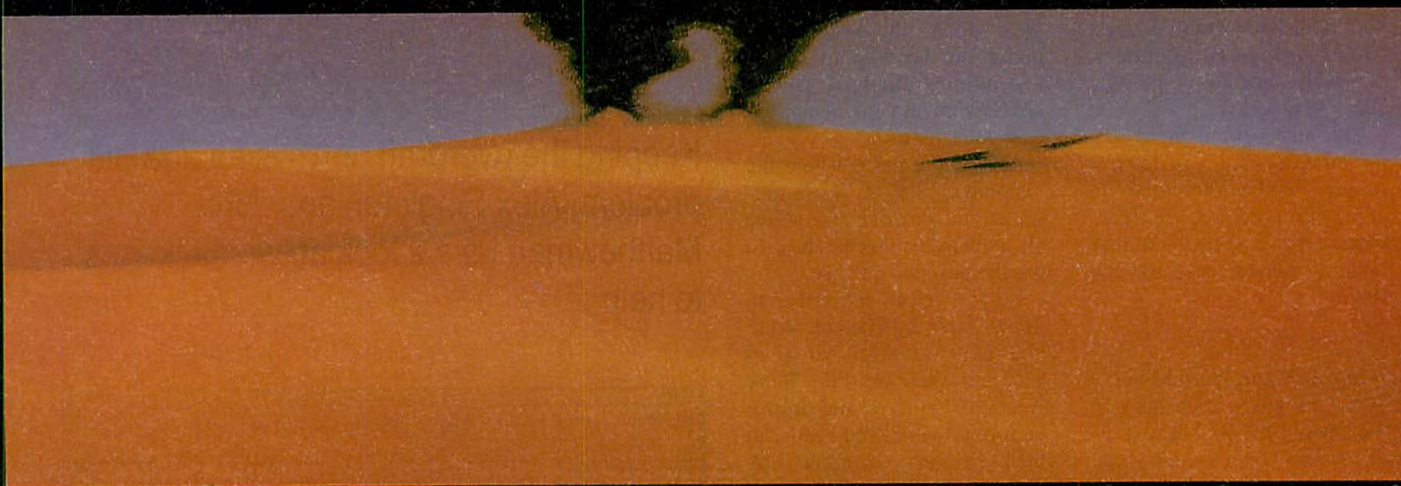
Marks out of ten for this game? Around the nine-plus mark as it is excellent. It's a little old, perhaps, and certainly a while in coming, but the nine discs, the attention to detail and the tongue-in-cheek humour all add up to a great day out in front of the computer.

I hear that a CD-ROM version with digitised speech is to be made available 'early in 1995' – start those sweepstakes now – at around £45.99. However, rumour also has it that *Simon II* will be out and about on the PC very soon.

Steve Atherton

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REVIEW

Loadsa money

Keeping the overdraft down is an age-old problem. Alex Singleton and John Matthewman take a look at two packages to help.

A hundred years ago, before banks were widely used, home financing was simple. You looked in your wallet (or purse) and saw how wealthy you were. Sadly, life has changed.

You may have a five-figure mortgage, an overdraft facility on your current account and numerous pieces of plastic which all have monthly fees. Then you may have your rates, electricity, and so on. paid by standing order.

The idea behind these two packages is that you have a running total of the money in all of your accounts, see where you have over-spent, as well as budget and forecast for the future.

Home Accounts

Home Accounts from Minerva Software was written back in the days of the Arthur operating system when dragging and dropping and graphical user interfaces were new. And this program attempts to take advantage of those, then new, advances. That's why almost everything is done by the mouse.

Upon loading, the menu window appears, conveniently showing your current balance alongside a number of buttons which lead to other parts of the program. The first thing to do is to set up your bank accounts and headers (although you can also add to these later).

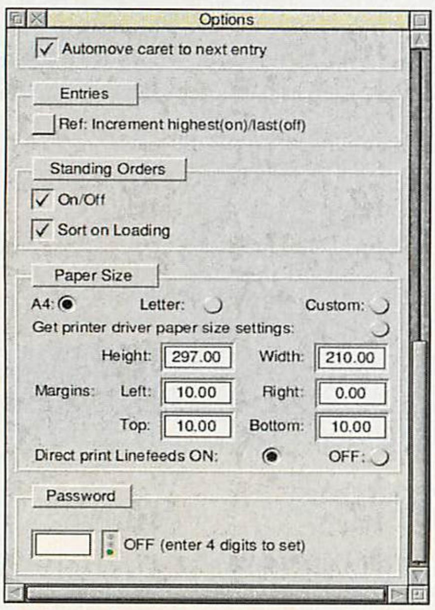
A header is basically a title or category. In other words, if you buy some petrol or have an MOT done, these could go under the heading of *Motor expenditure* allowing you to see how much your Jaguar has cost you later on.

This is the place where the manual comes in. Well presented, informative and, above all, concise, it teaches how to use the program quickly.

So you've just subscribed to *Acorn User* by cheque. What you have to do is drag an account out of the Bank Accounts window and drop it on top of the desired header in the Headers window. A dialogue box appears for you to type (or drag onto) the relevant information.

That is one of the most aggravating parts of the program. You've got a dialogue window on the screen and you want to call up the Headers window. So you click on *headers* and, low and behold, the dialogue window disappears. This happens to all dialogue windows and is rather infuriating, though they don't vanish if you click on, or type in, another program.

Standing orders are automatic and *Home Accounts* allows the first payment (the deposit) to be different to all subsequent ones. Unfortunately, there is no way of having standard orders paid only, say, eight months of the year. Also, you cannot enter decimal points (i.e. every two and a half weeks/months). Budgeting, graphs and reports are fully implemented; however only the reports can be printed. Forecasts are not implemented.



Forgive me if I'm wrong, but doesn't this have more options than even *Publisher Plus*?

The main problem with this package is that it has never been developed since it was first released. There is *still* no way of deleting an entry, while you *can* edit them, and I can't work out a logical reason for this – there just isn't one.

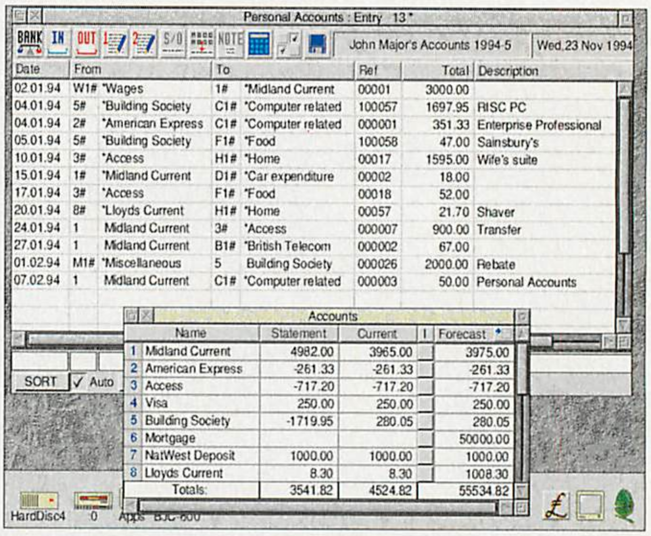
The package promotes frustration – windows disappearing and so on. It's not that I dislike this program but I just feel that Minerva should have gone much further to improve its interface. The manual is excellent – but without it I wouldn't have been able to use this program at all.

Personal Accounts

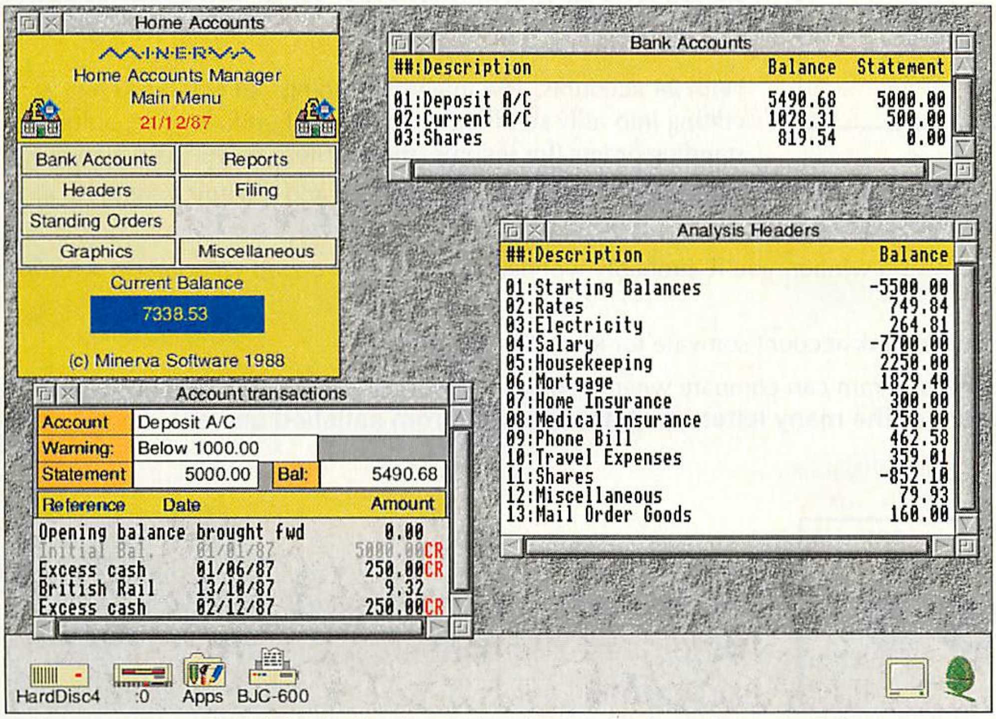
As its name suggests, *Personal Accounts* is just for doing personal accounting, and that's why I like this package so much. It isn't a program aimed at cash-based businesses which is *also* capable of doing home finances. Simply, it does personal accounting – no less, no more. However, that isn't the same as saying it is lacking in features – it's one of the most flexible programs available.

Clicking on its pictogram on the icon bar produces the main entries window, which has a button bar along the top. Alternatively, a menu window can appear instead – there is an amazingly comprehensive options window (see left).

The first thing to do is to set up your bank accounts by selecting the bank icon. This produces a window from which you can find out how much you have in each account and set up information such as



The spreadsheet-style main entries window in *Personal Accounts* showing off its new button bar. Underneath is the Bank Accounts window showing the automatic forecast.



In *Home Accounts* everything is done by dragging and dropping. But what do you drag on to what?

opening balances. Automatic standing orders and headings are implemented, though unlike in *Home Accounts* there are different headings for income and outgoings.

The dragging and dropping facilities have been copied from *Home Accounts* so that those swapping programs will feel at home – though I'd much rather just type things in – especially as in most instances abbreviations can be used. To save typing you can set quick entry presets. These are a time-saver for transactions which happen fairly often but on an irregular basis.

There are a number of other useful features including an editable calculator and a notepad. A 'traffic light' password can be set in the options.

A budget for individual headers can be set and you can see how much money you have left if you are to keep within that. Automatic forecasting is implemented, though only for bank accounts.

Graphs are not implemented, though the reports can optionally take full advantage of outline fonts. Two separate windows are used for this – one for transaction reports and the other for summary reports.

Unfortunately, these are too cluttered and spoil an otherwise excellent program. I would also like to see a streamlining of the program – there are too many options left over from previous versions.

Conclusion

Both these packages offer excellent value for money. They could both do with improvement, though *Personal Accounts* is by far the superior. It offers a more intuitive interface and data entry is quick.

In fact, it is rather innovative in that entries are typed in just like in a spreadsheet or word processor. More importantly, *all* entries are editable *and* can be deleted.

Altogether I find it far faster and easier to use than any other package I've ever tried. I never thought I would ever want to use a home accounting package, but after using *Personal Accounts* I've changed my mind. AU

Personal Accounts – a home user's view

For ages I have wanted a nice simple program to keep track of my household accounts – nothing too complicated or sophisticated, but a help when it comes to working out the study allowance for the tax return, and warning me when those standing orders I had forgotten about were going to hit my bank account.

A year or so ago I started using *Microsoft Money*, resigned myself to using the PC for this job, and found that it was very well suited to the task. When I came across *Personal Accounts* for the Archimedes, I was interested to see how it compared with *Money*.

Loading and start-up were straightforward, and very informative interactive help is provided using *Help*. A basic difference of design was immediately apparent between the two programs; whereas *Money* is fundamentally account-based, with all transactions being into or out of an account of some kind, *PA* is transaction-based, with each transaction being from somewhere to somewhere else. For example, when you buy *Acorn User* you might want to show a transfer of £2.95 from your bank (or petty cash) account to 'Books', 'Computer Magazines', or your newsagent, whilst income shows as a transfer from 'wages' or 'review fees' or 'gifts received' to your bank account. If you have more than one bank account then transfers between them are handled in exactly the same way.

The practical result of this difference is seen if you entered a transaction to the wrong account. In *PA*, you simply change the account in the transaction, whereas in *Money* you have to delete the transaction, change accounts, and start over.

Using the reports available from *PA* you can view, file or print summaries of accounts and of income and expenditure against the headings you have selected, as well as comparing with a budget you have set. *PA* will mirror your standing orders, and post them at the right times – the interval can be set to any number of days, months or years, so you can deal correctly with the four-week interval at which DSS pension is paid. *Money* can only deal with these as monthly payments, so you have to keep correcting the date.

Both programs allow you to project your account ahead, by a period which you can set. More importantly, both tell you what your bank cannot, which is what your account will contain when all the cheques you have written are presented.

If you want to handle several different accounts, and particularly if you want to handle investments, then you will want the much more powerful facilities available on *Money*. If, like most people, you just want to keep track of one or a few accounts, I suggest that *PA* is just what you have been looking for.

John Matthewman

Product details

Product: Personal Accounts
Supplier: Apricote Studios
Tel/Fax: (01354) 680432
Price: £49.95 inc VAT

Pros: Small learning curve • All entries erasable

Cons: No graphing

Product: Home Accounts
Supplier: Minerva Software
Tel: (01392) 437756
Price: £34.95 inc VAT

Pros: Graphing supported • Excellent tutorial

Cons: Peculiar user interface • Can't delete entries • No forecasting

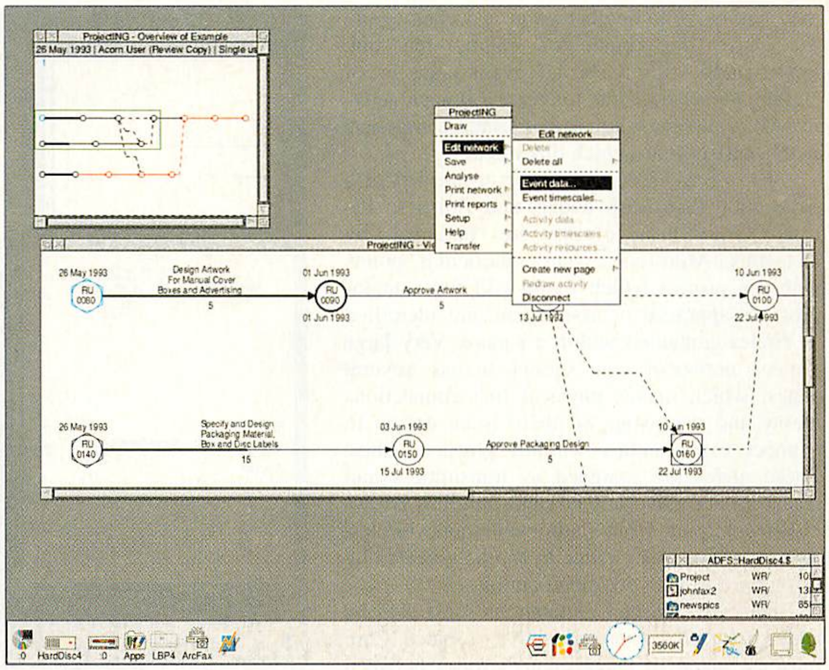
Project planning

Ian Burley plans some important projects with the management package from ACP, ProjectING.

ProjectING is a software package aimed at improving the workflow efficiency and enabling the analysis and management of projects. It is suitable for complex and major corporate-wide tasks which incorporate resource-allocation and budgeting plus the participation of several team members and even external contractors, or it can be applied to much simpler tasks like classroom projects run by both teachers or students, though the cheaper and simpler version called *PlanING* (see review, March 1994) is probably more appropriate for these smaller tasks.

Examine the workings of most companies worth their salt these days and you will find a degree of continuous analysis and management of tasks or sets of tasks to which people have been assigned. Conventionally, these people might have regular meetings to discuss the progress of their projects and someone might have the responsibility of making a record of who has done what, how and when. Then someone has to cast an expert eye over the notes to identify how progress is, overall.

Project management is the kind of application a computer is perfect for. You can tell the computer the project participants, resources, costs, outline the tasks, relate the tasks to timescales and proceed to let the computer work out how everything fits together – or even if the schedules actually do fit together. Progress variables can be altered accordingly and with a good reporting system you should be able to see – at a glance – how everyone is doing, how far ahead or behind a schedule is and even how close to the budget it is.



The small window shows an overview of the whole network. The green outline shows the region covered by the main edit window.

ProjectING's origins

Business-level project management software is very common on the IBM PC-compatible platform, but as far as I know *ProjectING*, from Advanced Computer Products (ACP), is the only such commercial package for the Acorn RISC platform. In fact, *ProjectING* has an interesting history which started inside Acorn itself, for whom it was originally developed as an in-house tool to assist the modernisation of working practices within the company. Projects within Acorn have been managed using computer analysis for many years now. *ProjectING* has an Acorn copyright date of 1988, though it was only in 1993 that ACP brought the package out into commercial distribution.

The majority of project management packages on other home and business computer platforms are based on the principles developed by Henry Gantt during the first World War. You may have already heard of '*Gantt* charts', which usually look like horizontal bar charts with a time axis running from left to right, punctuated by target dates, activities, milestones and other project stages. *Gantt* charts are relatively simple, and very easy to examine and understand visually, but can prove limiting when attempting to manage very large and complex projects because it is not easy to link the relationships between separate activity lines.

Therefore, Acorn rejected the *Gantt* system and opted for a project management system based on networks. Systems like CPM (Critical Path Method) and PERT (Project Evaluation and Review Technique) are network-based project management techniques developed since the second World War and, for example, PERT was the basis for the project management of the development and production of Polaris nuclear submarines.

Drawing your project

ProjectING, which actually stands for Project Interactive Network Graphics, uses nodes and vectors to form a network of events and activities which make up the overall project. The vector drawing metaphor is used, reminiscent of *Draw* and ideal for a mouse-based user interface like the RISC OS desktop. All *ProjectING* projects start and end with an event node, each of which is represented as a circle, sometimes bounded by other polygonal shapes depending on its status. Activities are the directional connecting lines linking two event nodes. Both events and activities are objects containing information like dates, labels and other status parameters.

The first task is to draw your project network. Before doing this you will need to have determined how the project should unfold; however it is possible to delete, add and re-route connections and nodes as you go along. Network editing is fairly easy – in drawing mode you click on a point to create an event starting point

then you move to another point and click again. You have the choice of ending the link immediately with a second event node or of angling the activity line to create a branch activity. All events must have a horizontal component in the activity lines which link them.

All *ProjectING* networks start to the left of a page with start/finish events and finish to the right. Start/finish events are bounded by hexagons. Milestone events, particular points within a project which might call for a major progress appraisal or assessment, are identified as circles contained within a square. Very large project networks can sprawl across several pages, which makes physical line connections messy and confusing, so there is an option to connect event nodes without physical lines. These nodes are assigned as transmitters and receptors and have left or right-pointing arrowheads emerging from their event node circles. The event node they relate to can be revealed by using the edit network menu option.

Timescale data and annotations must also be added to each event and activity object. Care must be taken to leave enough room between events for activity labels – I'd like to have seen an auto-spacing option or a grid for this. The annotation entry-editor, if you can call it that, is rather over-simplified and you have to enter text in distinct lines separated by Tabs instead of Returns. The next task is to enter the scheduled start and finish dates for each event and activity. These appear above and below the event nodes and – as the number of days – on activity lines.

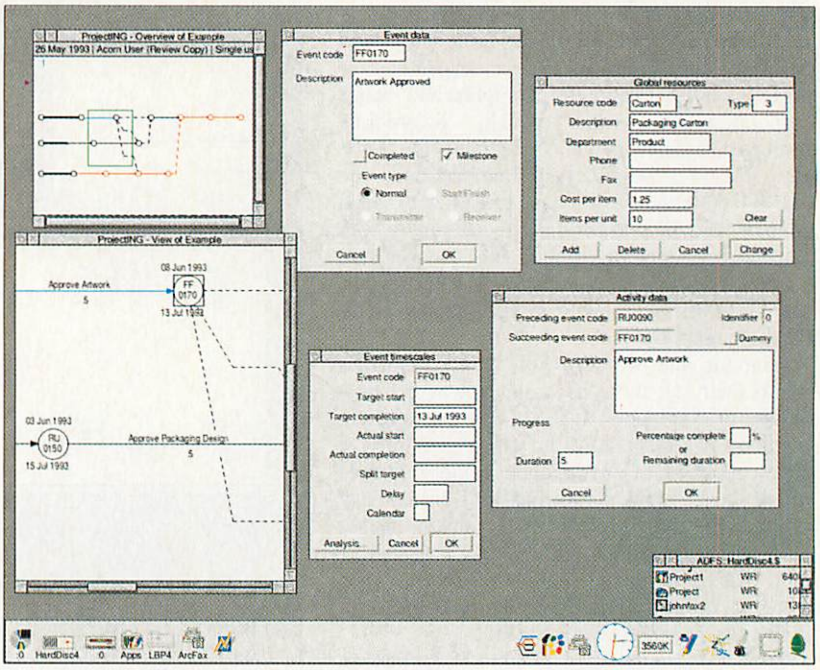
Editing the network

When the physical structure of a *ProjectING* network has been completed, it will show a map of the planned progress of a project, outlining the scheduled start and finish dates of each stage of the project and the length in days of each activity. As your project plan evolves, you can use the draw function to drag nodes around the page, maintaining activity connections. Connections can be disconnected, re-connected elsewhere, deleted, new events inserted and re-connected, though care is needed as it's possible to lose a string of nodes by deleting the wrong activity line. There is no undo facility to recover from inadvertent edits.

While I was experimenting with *ProjectING* I had managed to enter a reasonably sized model but a mysterious application error crashed the program. No problem, I thought, as the manual had recommended frequent document saving. Alas, the model I had saved refused to re-load and a day's work was lost. ACP tells me this is a first – trust it to have happened to me!

Another key to the versatility of *ProjectING* are resources. You are able to assign both global and activity resources within *ProjectING*. A global resource can be a person or contractor, complete with contact details and a costing if applicable, or services and/or materials.

Finally, you have a fully-loaded project network and the project itself starts. As time goes by, progress data is entered into event and activity variables, like actual completion dates, for example. At any time during the life of the project you can perform an analysis of progress, which can be manual or automatic. This operation follows the flow of the project and relates actual task completion time, calculates what's ahead of or behind schedule and, if necessary, calculates savings or excess costs in relation to resource variables. Visually, the network begins to fill up with thicker activity lines to indicate completed activities.



These are just some of the many dialogue boxes for entering activity labels, scheduling and resource data.

At this point you can determine the critical paths within your project, around which the whole project will hinge. Time floats – both positive and negative – can be determined and spare time re-allocated to help late project segments catch-up. The analysis function can produce a variety of different format reports, each of which can focus on a specific area like department, critical path, milestones, and so on.

Conclusions

ProjectING is a potentially powerful tool. I find myself wondering if it's a bit too complex and powerful for minor project applications where a more conventional *Gantt* chart would be a better choice. Of course, there is the cheaper *PlanING* alternative without resources and reporting plus a size-limitation on networks. ACP also suggests that a pseudo *Gantt* view can be obtained by exporting *ProjectING* data into a spreadsheet and graphing it.

I do have some minor concerns about the application itself, not its capabilities. There is a slightly aged feeling about the software – there are no function key or alternative key short cuts, the graphics look a bit spidery, there is no tool bar, dialogue boxes are sometimes over simplified and you can't export networks as *Draw* files. Dedicated users will find these points minor annoyances in relation to the value of the product's functional worthiness, but it does suggest that *ProjectING* could do with further refinements to bring it further away from that in-house developed feel and on to a more commercial package for the open market. Niggles aside, *ProjectING* deserves a place among the top RISC OS packages as an essential serious business tool. Demonstration versions of *ProjectING* and *PlanING* are available on request. AU

Product details

Product: ProjectING
Supplier: Advanced Computer Products Ltd
Tel: (01276) 472046
Fax: (01276) 451427
Price: £299 + VAT
(*PlanING*: £99 + VAT)

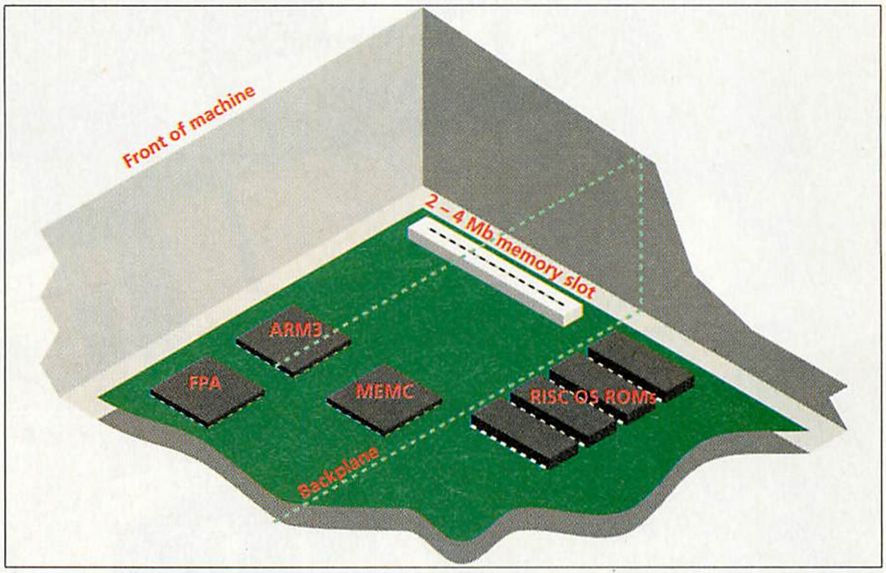
Pros: Powerful • Versatile • Unique

Cons: Tired look and feel • Steep learning curve

Double your memory

David Matthewman upgrades Acorn User's trusty A5000 to 8Mb of RAM.

A5000 owners were understandably worried by the release of the Risc PC. Here, out of nowhere, was a machine which could be upgraded to contain vastly more RAM than their machines. There was the danger that software writers would get lazy and write programs for which even 4Mb would be a squeeze. While this has not happened much, there is no denying that *Publisher* and the photo retouching packages benefit from running in 8Mb of RAM. Fortunately, this can now be done. There are four upgrades available: from Atomwide, Beebug, IFEL and Simtec.



The circuit board in an A5000, showing the locations of important components relevant to the fitting of a 4-8Mb RAM upgrade. When upgrading, the MEMC is replaced by a pair of MEMCs on a board, and the extra memory plugs into either the ROM sockets or the 2 – 4Mb memory slot (which may not be present in some machines). Whether or not the MEMC is soldered directly to the circuit board affects the ease of the upgrade.

The upgrade design

There are two problems when upgrading an A5000 to 8Mb. The first is exactly where the extra memory will fit. There are two approaches to this problem: the upgrade plugs either into the 2-4Mb expansion slot or the RISC OS ROM sockets (see diagram).

Both the Simtec and the Atomwide boards plug into the ROM sockets, with Simtec's board ingeniously hiding the RAM chips beneath the ROMs in a highly compact design. This does mean that you have to remove the RISC OS ROMs to fit the upgrade, and may involve more dismantling of the computer, but it is a once-only operation. Neither upgrade should interfere with the fifth ROM if it is fitted.

The IFEL and the Beebug upgrades plug into the memory expansion slot. This presents a problem for owners of A5000s fitted with 4Mb RAM on the circuit board, as the slot may not be there. If it isn't, you will have to get the upgrade fitted by a dealer, who will fit the slot for you. Not all 2-4Mb boards will physically fit with the Beebug and IFEL upgrades. However, Beebug's upgrade simply replaces any existing card and IFEL will exchange the 2-4Mb upgrade for one which will fit, so this is not really a problem.

The second problem with expanding an A5000 to 8Mb is that the MEMC memory controller will only address 4Mb of memory. In order to address 8Mb two MEMCs are needed, one master and one slave. 4-8Mb memory upgrades therefore replace the MEMC in the A5000 with a pair of MEMCs mounted on a circuit board.

It is important to finely balance the two MEMC chips, otherwise address exceptions might occur, for instance with one MEMC asking for an address before the other is ready. This is especially crucial in the A5000, where the MEMC is clocked at 36MHz rather than 24MHz. The Simtec, Atomwide and IFEL upgrades come with a pair of matched MEMCs mounted on a circuit board, but the Beebug one re-uses the MEMC which is already in your A5000. This is less satisfactory, because there is no way of matching this with the MEMC on the upgrade.

Older A5000s, with a 25MHz ARM3, have the MEMC soldered directly to the main circuit board. Those with a 35MHz ARM3 have the MEMC in a socket. Extracting the MEMC from a socket to replace it with the dual MEMC board is fiddly but possible, using a PLCC extractor tool (supplied with the upgrades). De-soldering the MEMC and replacing it with a socket is much harder, and should only be done by a competent dealer, so owners of 25MHz A5000s will normally have to send their machines away to be upgraded.

If you have a socketed MEMC controller (and a memory expansion slot for the IFEL upgrade) there is no reason why you should not fit the upgrade yourself. However, if removing chips from circuit boards is not your cup of tea, or if you are at all worried about how to fit the upgrade, then it is worth the extra £40 or £50 to have the upgrade fitted by a competent dealer. Beebug's price includes fitting if the upgrade is bought from it.

8Mb in other machines

Although I have concentrated on the A5000 for simplicity's sake, similar upgrades are available for all earlier Archimedes computers except the A3010, A3020, A4000 and A4. With the A300 series and the A3000, whether or not the upgrade will fit is highly dependent upon the make of 4Mb upgrade in the machine. The A3000 upgrade is also dealer-fit only, but all the others can be fitted by a home user with a talent for a PLCC extractor.

All upgrades follow a similar pattern to the A5000 upgrade, except for the A540. The A540 was designed to be expandable to 16Mb and is probably the easiest of the lot to upgrade. AU

Product details

Manufacturer	Tel	Fax	Price (for 4Mb to 8Mb upgrade)	Price for dealer fitting & carriage
Atomwide	(01689) 838852	(01689) 896088	£259 + VAT	£50 + VAT
Beebug	(01727) 840303	(01727) 860263	£298.73 + VAT	Free if bought from Beebug
IFEL	(01752) 847286	(01752) 840029	£259 + VAT	£50 + VAT
Simtec	(01772) 812863	(01772) 816426	£259 + VAT	£40 + VAT

Sliding about

Steve Powell takes a look at a very high quality printer capable of outputting images direct to slides from the Risc PC.

The Burden Neurological Institute is fast becoming a hotbed of Acorn development. Following hot on the heels of its DSP card – reviewed three months ago – it's about to release a slide printer for the Archimedes.

The Institute has more than a few claims to fame: the first robot, delta waves and a clutch of EEG-related firsts. The institute is a research-based organisation that focuses its attention on cognitive research. This means that it's trying to unravel the inner workings of the human brain and how the old grey sponge gets up to all the clever tricks that it does.

Burden and Acorn machines

Burden has been using computers to help it with its research and rehabilitation programs for years and having started out with the faithful BBC B it naturally progressed onto the Archimedes and Risc PC. The institute uses about 20 machines for everything from administration to data acquisition and rehabilitation programmes without a PC in sight. It uses a variety of machines for data acquisition and analysis wired up to EEG machines via the DSP card it developed itself.

As well as producing all its reports and letters on its Arcs, it has been using them to produce slides for the numerous presentations that they give. To do this the Institute has wired up a couple of Polaroid film writers to a Risc PC. With these, the computers can print slides, transparencies, film proofs and all manner of photographic negatives.

To do this the Institute has had to write its own software, a task which Dr Hutch Curry and Nigel Brown – its resident technical experts – described as challenging. The gizmo that actually prints the slides is a Polaroid CI-5000 film recorder. It uses a SCSI interface to talk to the Risc PC on the other end of the cable and the proprietary interface software that Nigel has written himself.

High resolution printing

The device has a maximum resolution of 4096 x 3600 pixels although the vertical resolution depends upon the type of film used. The film recorder accepts a variety of different camera backs and supports a whole host of film types varying between conventional 35mm film to 5x4 proofs and transparency film. All of the prints are in 24-bit colour and the results depend heavily on the type of film used.

An image takes about five minutes to print although the film then needs to be processed. Instant film can be processed in a few minutes and peel-apart proofs provide an easy way to check your images quickly. Both Hutch and Nigel took great pleasure in printing a proof while I chatted to them.

The software allows you to set up a batch of prints to be processed, each with its own brightness, contrast, colour and gamma correction values. The software accepts almost every type of file that you're likely to come across and interfaces seamlessly to the CC graphics loaders. As Nigel said: 'The device driver only took a couple of months, but the interface and all the different loaders took the best part of half a year.'

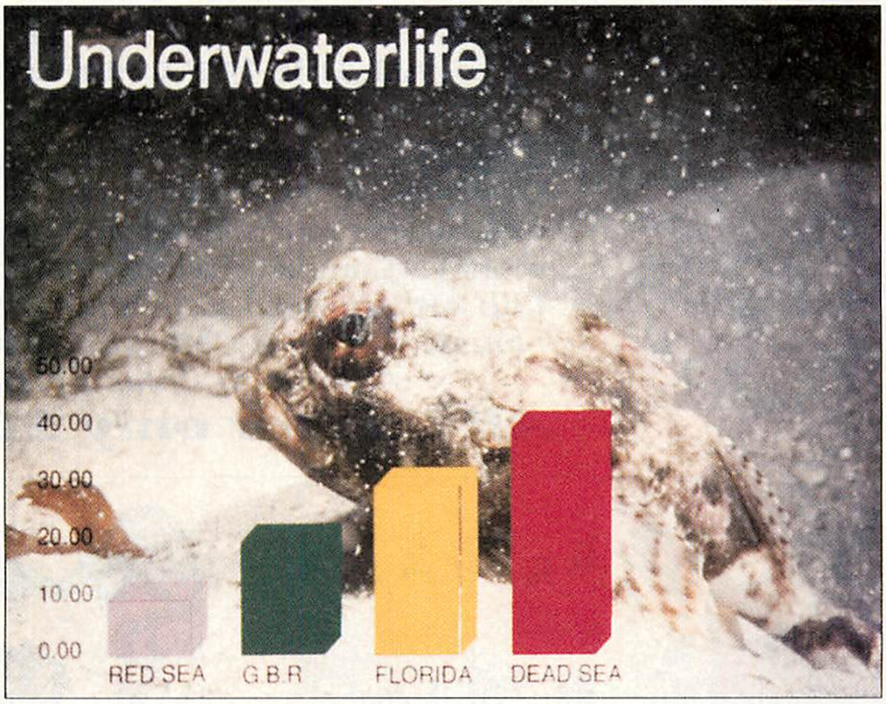
As a result of all this hard work you can effortlessly import JPEG, TIFF, Photo CD, PC BMPs and PCXs, Mac PICTs, and Targa images as well as *ArtWorks* files, sprites and *Draw* files.

The film recorder and software for the Archimedes will set you back around £5500 which compares favourably to similar Kodak systems. You'll need a fairly beefy Risc PC with a SCSI card to drive it though, so don't expect one as a late Christmas prezzy.

A fishy tale

Not too long ago Nigel quietly retouched a Photo CD image of his son holding up a fish they'd caught one weekend. Having doubled the size of the fish his son was holding in the picture he then produced photographic evidence of his implausible catch – who says the camera never lies?

Apart from presentation slides, almost everyone uses slides and trannies for publicity shots, and the ability to print straight to film or negatives offers all sorts of photo-retouching possibilities to photographers and illustrators who need professional quality optical prints. The ability to create negatives, slides or prints from Photo CD images could put one of these systems into every photo lab in the country. For anyone wanting to offer slide bureau facilities these machines should be seriously considered. AU



Creating presentation slides with the Burden printer is easy, and the quality is astounding.

Product details

Product: Polaroid CI-5000 film printer
Supplier: Burden Neuroscience Ltd
Tel: (01272) 567444
E-mail: nigel.browne@bristol.ac.uk
Price: £5500

Pros: Prints directly to transparencies, polaroids and negatives • Accepts most file formats • Superb quality

Cons: Price

Nice and easy does it

One of the minor hits of the show was EasyFont 3 from Fabis Computing. David Matthewman finds out why.

It is only six months since the release of version two of Fabis Computing's font management software *EasyFont*. Now, *EasyFont 3* is upon us with a larger box, thicker manual and nice blue logo. There are also some excellent and welcome improvements.

EasyFont allows you to control which fonts are visible to your system, so you can have a hard disc full of weird and convoluted typefaces without a font menu that stretches for three screens. The original solution to this tended to be to have a number of *!Fonts* directories, which you only ran when you needed the particular fonts within; this was complicated, did not allow you to de-select fonts, and required you to remember which fonts were in which directories.

Font filing system

EasyFont 3 solves all of this by having its own filing system. It stores all the fonts in an internal file, similar to an *ArcFS* or *SparkFS* archive. *EasyFS* – the font filing system – is optimised for storing fonts, so manages to compress the fonts with no speed loss when accessing them.

The *ArtWorks* fonts, which take up ten megabytes and – because of the 77 file limit in ADFS – *three* ADFS font directories, only take up seven megabytes in an *EasyFont 3* font partition. Fabis Computing claims 40 per cent compression in the best cases; even 30 per cent for the *ArtWorks* fonts is welcome.

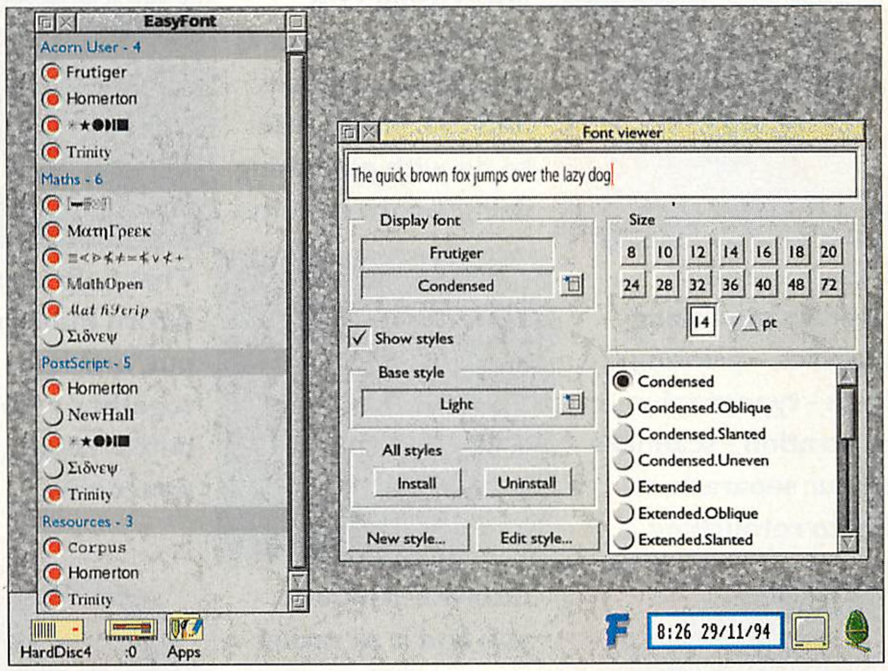
When fonts are added to *EasyFont 3* they are added to one or more groups. You can, of course, keep all your fonts in one group, but it is useful to create a number of different groups with names like 'Sans Serif', 'Headline', 'Decorative' and 'Script', or based on where you got them like 'EFF', 'Datafile' and 'Monotype'.

The beauty of the *EasyFont 3* system is that a font can be in more than one group, even though there is only one copy of it within the font partition.

Moving and copying fonts between groups could perhaps be improved. Currently, it is a matter of going through a menu to change the groups selected for a particular font, and there is no way to select several fonts and change their groups in one go.

A second niggle concerns the ROM fonts Trinity, Homerton and Corpus. These cannot be deselected. Because *EasyFont 3* operates on font families rather than individual weights, it is impossible to add fonts like Homerton.Light – which we used to use in headlines – to the font file.

Apart from this, the system works very well indeed. *All* the fonts – even uninstalled ones – are displayed in the correct WYSIWYG style, making it much easier to find the font you are after. This takes no appreciable time, something Mac users of the same feature will be envious of.



Here at *Acorn User*, we have a fixed and small set of fonts used in the main text of the magazine. Using *EasyFont 3*, these can be kept in a group called 'Acorn User' and designated as the sole accessible fonts when working on the magazine. Note that the Homerton font appears in two other groups, although only one copy of the font is present in the *EasyFS* partition.

Original features

So far I have concentrated on the new features of version three of *EasyFont*. Naturally, this version retains the ability to scan many filetypes for a list of fonts used, which it will then install, automatically updating the font list of most applications.

You can also use it to create new weights of existing fonts – SemiBold, Condensed, Oblique and so on – a feature which has been extended from version two to include the ability to base your new weights on more than one original style.

For instance, you can base your Oblique font on the Medium original, and your Condensed weight on the Light original. The editing window now offers a clearer idea of what the effects of a change will be. The extra weights that you create hardly add anything to the disc space taken by the font as they are small transformation matrices rather than whole outline fonts.

If you have and use more than about ten fonts on your system, this program will be useful. Anyone involved in DTP or graphic design will wonder how they ever coped without it.

EasyFont only runs on RISC OS 3.1 or higher; in this respect, the very capable *FontDir* from LOOKsystems is ahead as it works on RISC OS 2 and 3.0.

However, Fabis Computing's product now wins on most other points, with the compression offered by the filing system an extra bonus for users with lots of fonts. AU

Product details

Product: EasyFont 3
Supplier: Fabis Computing
Tel: (01283) 552761
E-mail: info@fabis.demon.co.uk
Price: £35 inc VAT

Pros: Font compression • Number of fonts only limited by hard disc space • WYSIWYG font display • Fonts can be grouped • New weights of fonts can be created

Cons: Needs RISC OS 3.1 or above • Works on families rather than individual font weights

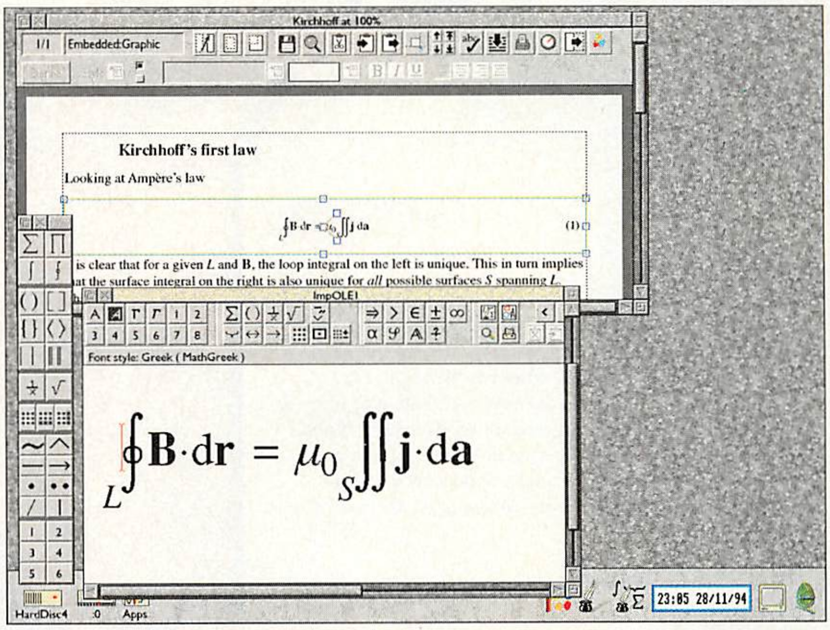
The winning formula

David Matthewman gives Formulix from Computer Concepts the once-over.

Computer Concepts's *Formulix* replaces and improves upon its previous attempt at equation-generating software, *Equasor*. It is a new program rather than an update, although it will read *Equasor* files, but not save them.

Formulix allows you to generate one-line formulae which can be dropped into *Impression* documents using OLE or saved as *Draw* files. When this is done, you can also save an equation number as a label; very useful when generating sequences of equations in a scientific document.

The formulae are, in general, easy to type in; a well thought out set of key short cuts makes most structures available without having to use the mouse. By combining Shift with Select and Adjust clicks on the extensive toolbar, most of the more complicated structures can be produced with a single click.



OLE with *Impression* allows formulae to be embedded within documents and edited easily. In this case, the 'L' on the loop integral and the 'S' on the surface integral have been added using invisible brackets, as they cannot be directly added to the left of integral signs.

Fonts supplied

Formulix comes with five font families, allowing access to most mathematical symbols. The *MathGreek* and *MathOpen* fonts come in bold weights, so at long last vectors like σ and ε can be included in equations. However, *Formulix* has no concept of 'local' effects – bold, italic, point size change – which I found rather restrictive. You can set up 12 pre-defined styles and then apply these to characters, but this is a fiddly way of, for instance, emboldening a vector, all too reminiscent of the way *Impression* used to implement bold and italic as styles tied to a particular font.

Apart from this, the various symbols provided by the fonts are easily accessed from a series of dialogue boxes opened by clicking on the tool bar. You can keep a selection of commonly-used characters in various fonts on a 'Free chars' dialogue box, but most of the ones you're ever likely to need are easily accessible anyway. *Formulix* has characters for integrals, sums and products, fractions, roots, accents including arrows, dots and bars, symbols for set notation and logic and all manner of brackets and braces.

As you type in the equation *Formulix* formats it, leaving a space either side of an equals sign, extending brackets, unitalicising functions and so on. *Formulix* also allows flexible matrix structures of up to 20 by 20 cells. These are easy to create and type in elements for, and enable you to generate correctly-aligned sequences of equations.

$$\langle \mathbf{e} \rangle_m = -f\,(\mathbf{e}^C - \mathbf{e}^T) = -f(\mathbb{S} - \mathbf{I})\mathbf{e}^T$$

Formulix is supplied with a number of useful fonts, including an 'open' font which supplied the S for the Eshelby tensor in this equation. Various aspects of the formula's appearance could be improved. For instance, in order to stop the 'f' clashing with the bracket, a space must be inserted between them, as has been done for the left-hand 'f'. Note that neither 'f' has redrawn correctly.

The manual

The manual goes through everything that *Formulix* can do. There is no tutorial section, which would have been very useful because when you load up *Formulix* you are presented with two full-to-bursting tool bars.

Admittedly there is support for interactive help, including a valuable help line in the tool bar itself, but this is no substitute for a decent, step-by-step tutorial to help you learn your way around the package.

Formulix is also a little unstable for my liking. It sometimes forgets to redraw parts of the screen, and the release version (2.0) which I was reviewing crashed twice.

If you want to write an equation, *Formulix* can probably do it, and it is certainly a lot easier to use than *Equasor*. If you're already used to another equation-editing package – a *TeX* derivation for example – I doubt you'll want to change. If you are using *Impression* and want to write scientific documents, or prepare worksheets with equations on them, this could be just what you need. The program is a little awkward to use in places, but powerful. AU

Product details

Product: Formulix
Supplier: Computer Concepts Ltd.
Tel: (01442) 63933
Fax: (01442) 231632
E-mail: info@cconcepts.co.uk
Price: £69 + VAT
(£49 + VAT to registered *Equasor* users)

Pros: Extended range of characters and symbols • OLE with *Impression* • Matrix generation • Undo buffer

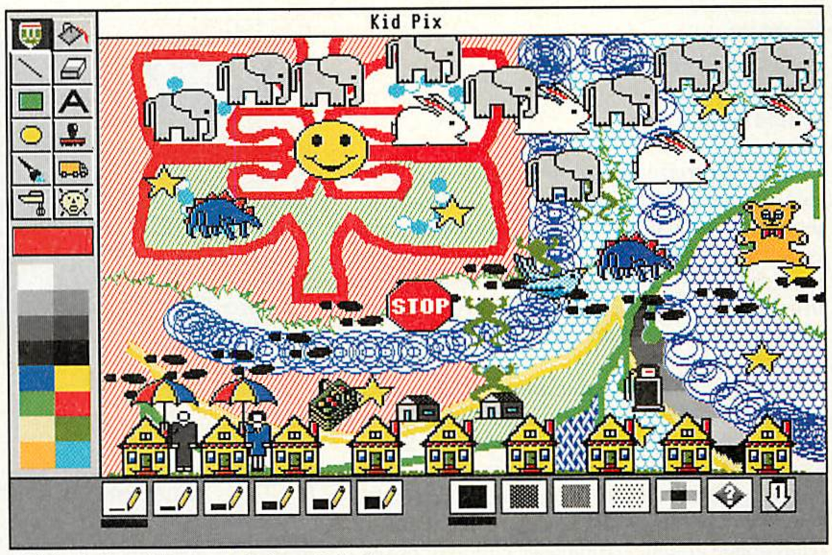
Cons: No local effects • Maximum of 12 styles • Thin manual

Good foundations

Colin Rouse looks at some exciting software to use at Key Stage One.

In the first of a two-part review of exciting software for the five to elevens, I have selected some suitable programs for the five to seven year age-group. The National Curriculum dictates that at this age pupils should be gaining experience of using IT for different purposes, and that they should be introduced to using a variety of IT applications in a range of contexts. I am right, hopefully, in assuming that many teachers are already familiar with the major programs, such as *Pendown*, *My World* and *Podd*, and have left them out of this review. Also, software I have previously reviewed in *Acorn User*, such as *Tiny Draw/Tiny Logo* and *The Playground*, to name but two, has not been included.

The programs that follow are a small selection of many that I have used and are varied in content and curriculum areas but all, I feel, meet the requirement that children use IT for different purposes in a range of contexts.



KidPix, designed for young Jackson Pollocks.

Oxford Reading Tree

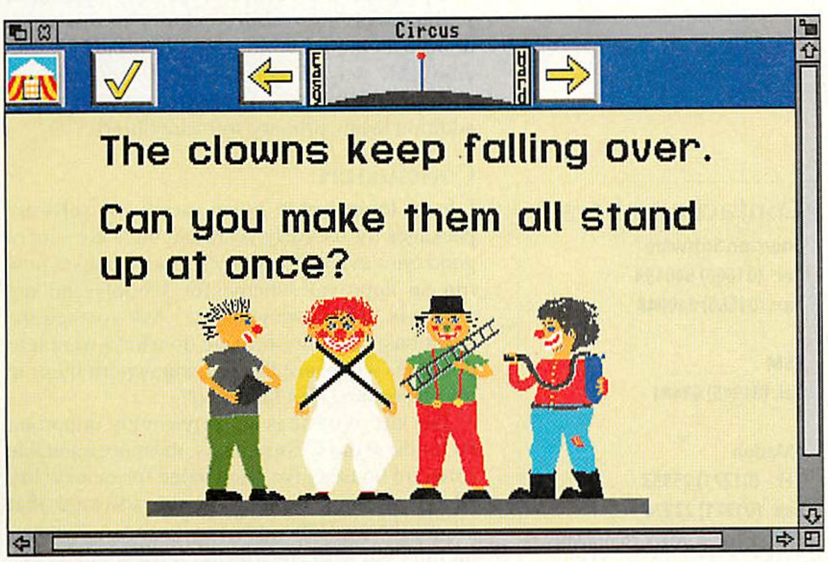
Product: Oxford Reading Tree – Stage two Talking Stories
Supplier: Sherston Software
Price: £39.95 + VAT (also available on CD-ROM)

This is a six-disc package based on the Oxford Reading Tree Stage two stories. Each story is produced on a disc with the same illustrations and narrative as in the original book. The pages of the book are presented in order and the child can turn the pages forwards or backwards with a click of the mouse. Each page of the story is accompanied by an option for the child to listen to the text by clicking the mouse on the ear button. The whole sentence can then be heard, each word highlighted as it is read. Single words can be read in the same way and these operations can be performed as often as is needed which allows children to read independently.

The illustrations have also been imaginatively animated and by clicking on the eye button a part of the picture can be brought to life, complete with sound. After reading the talking story, children can then use the keyword facility to increase their understanding of such words both in and out of context.

Children can easily use the talking stories independently but there are also teacher operations which can be used to guide and monitor the children's use of the software. The teacher can easily turn off the whole sentence function so that children can concentrate on individual words, and can also ask the computer to keep a record of the words children wish to hear using the word log facility.

Talking Stories is an invaluable way of giving children independent reading practice, and they are an excellent addition to the range of language activities which are part of the Oxford Reading Tree. For those children who are having difficulty in starting to read, this package is especially useful, helping them to read with confidence, enjoy stories and develop an understanding about the way language works. Most importantly, they are fun to use and a valuable introduction to Information Technology in the early years classroom. I would highly recommend it.



Trouble at the *Maths Circus*, can you help?

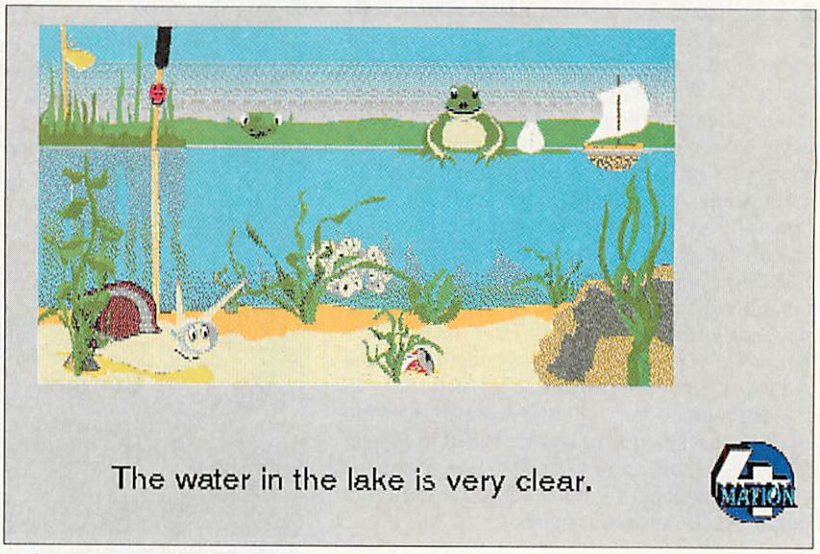
Kidpix

Product: Kidpix
Supplier: ESM
Price: £39.50 + VAT

Kidpix, a bronze award winner in the 1992 Educational Technology Awards, is a ready-to-use painting and drawing box where children can create paintings and drawings using a variety of special effects and options. It can be used with little or no adult supervision as everything is at hand – brushes, paints, pencils, erasers and a whole lot more.

Children will enjoy exploring the *Kidpix* environment of drawing tools, sound and visual effects to produce spectacular results. Sound effects can be used whereby letters and numbers can be spoken out loud. Text can be placed on the screen without using the keyboard and there are ready-made graphics to enhance children's work.

Younger children find this software appealing and easy to use, especially if they can print the results in colour. If you are looking for an art package for the infant classroom, this is well worth a look.



Is *Flossy the Frog* going for a swim?

Splash

Product: Splash
Supplier: Sherston Software
Cost: £19.95 + VAT

Splash from Sherston is another art package that can be used at the top of Key Stage one. It is a simple art package, but has a range of powerful features. Featuring push-button menus, *Splash* can be used to create sophisticated pictures where the only limit is the imagination. Once familiar with the program, children can use it throughout the primary school to design and modify their artwork.

Explore with Flossy the Frog.

Product: Explore with Flossy the Frog
Supplier: 4Mation
Cost: £24.50 + VAT

4Mation has built its reputation on high-quality educational software and *Explore with Flossy the Frog* does not disappoint. It is a simple program and provides reading opportunities, problem-solving tasks and a stimulus for creative activities away from the computer. *Flossy* has nine different scenes, each containing objects and characters which will 'perform' when clicked on – either an action or some text will be displayed

Young children are fascinated with this software, because it gives some excellent opportunities to develop language skills and creative work, stimulated by the graphics and animations which are superb. For using the computer to stimulate work away from it, I would not hesitate to recommend this program to any early years classroom.

Connections

Product: Connections
Supplier: Sherston Software
Price: £28.95 + VAT

Connections meets the requirements of the National Curriculum in Mathematics. It is built round the concepts of connections and patterns and can be used to help young children learn and understand early mathematical concepts. Children have to alter the contents of each window to make true connections – this involves a variety of maths activities including addition, subtraction, money, fractions, odds and evens, graphs, place value and so on.

Used with equipment found in the early years classroom and the printable worksheets available on disc, I have found this an excellent program to help children achieve and understand many mathematical concepts.

Contact numbers

Sherston Software
Tel: (01666) 840433
Fax: (01666) 840048

ESM
Tel: (01945) 63441

4Mation
Tel: (01271) 25353
Fax: (01271) 22974
E-mail: nsouch@cix.compulink.co.uk

Maths Circus

Product: Maths Circus
Supplier: 4Mation
Cost: £27.50 + VAT

Maths Circus is a collection of 12 puzzles set in a circus environment. Each puzzle has five degrees of difficulty catering for different abilities within the classroom, plus a set of 24 activity sheets and suggestions for additional activities. Can you help the human cannonball hit the target? Can you help the crazy clowns?

Presented in a thoughtful and attractive way, this program aims to assist the development of problem-solving skills through activities designed to provoke clear thinking in an enjoyable way. Teacher control and progress-saving facilities make *Maths Circus* a very useful addition to any primary software library.

Conclusion

I have looked at a great variety of software packages for the early years and there are a lot of good ones available. Many software houses now run an approval scheme for schools and my advice is 'try before you buy.' Ask yourself the questions: does the software do what I want it to do? Does it enhance the learning opportunities in my classroom? Can I afford it?

The last of these is an increasingly important factor these days. Fortunately, the more reputable software houses give good value for money. My advice is, look around for the software that allows the pupil the opportunity to use IT meaningfully but with enjoyment, thus gaining in both IT skills and curriculum enrichment. AU

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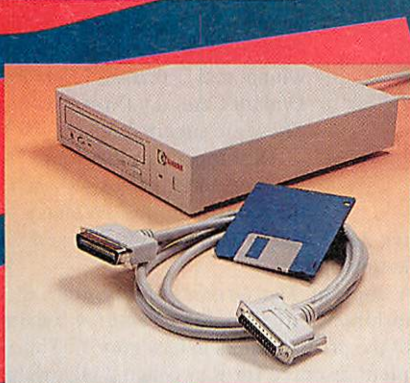
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These special offers are also available through Acorn dealers and are subject to availability. Offer closes 31/1/95.

Schools'

Prizes are flooding in for the Acorn User schools' competition. Geoff Preston takes a look at what you can win.

Support for the schools' competition announced in the November issue of *Acorn User* is hotting up, and there's no doubt that it will be a great success.

How to enter

The competition is open to all students, regardless of age. We've also taken the unusual step of encouraging mature students to enter which means that as long as you are in full-time education you can take part. Schools are restricted to one entry only, and there are four categories:

A: Primary School up to 11 years of age (KS 1 and 2)
B: Secondary School 11-14 years of age (KS 3)
C: Secondary School 15-16 years of age (KS 4)
D: 6th Form/College/University 17+ (as long as you are in full-time education)

The entry must be on the official form at the bottom of this page and must be accompanied by two star tokens from the *Acorn User* Education Page. Entries must be sent to the *Acorn User* office any time during March 1995 and the winners will be notified by post and the prizes awarded at the 1995 *Acorn User* Show. Please note, this competition is not restricted to UK residents only; we welcome overseas entries and if necessary will try to arrange for any translation.

For the competition, we want you to create a complete A4 page for *Acorn User* magazine. By complete, we mean everything including the text, headers, graphics and layout. The winning entries will feature in a future issue, either in the magazine itself or on the cover disc. Each entry should come from curriculum-related work, so need not necessarily require any extra work from the school. The entry form and full details of the competition appeared in the November issue.

What you can win

The prizes are being donated by some of the top software and hardware companies in the Acorn market; the list is looking like a 'Who's Who' of Acorn software and hardware. My apologies if any contributors' names arrived after my deadline and are therefore missing from this list – they will be included in the next competition update. A more detailed description of how the prizes will be awarded will be included then, but to whet your appetite here's what you can win.

4Mation has kindly donated one piece of software for each of the four categories. Prize winners will be able to choose from a huge list of software including the innovative *smArt*, the animation program *Noot*, and the popular and delightful adventures *Granny's Garden* and *A Mouse in Holland.*

If you've been following my updates on CD-ROMs you will have seen several references to Academy Television. It has produced some excellent products and a prize-winner from Category C will be able to choose one of its CD-ROMs from a list which includes *World War II: Global Conflict*, *Environment I: Water*, *Environment II: Land & Air* and *French: Directions 2000.*

Aspex Software has generously provided a copy of *Spex* including all current *Spex* files (*Moonbase*, *Street*, *Classroom* and *Home Environment*) for each category.

To emphasise how powerful and easy to use its product is, Circle Software has kindly donated exactly the same prize to each category: *ImpactPro*. Computer Concepts has also donated a prize for each category.

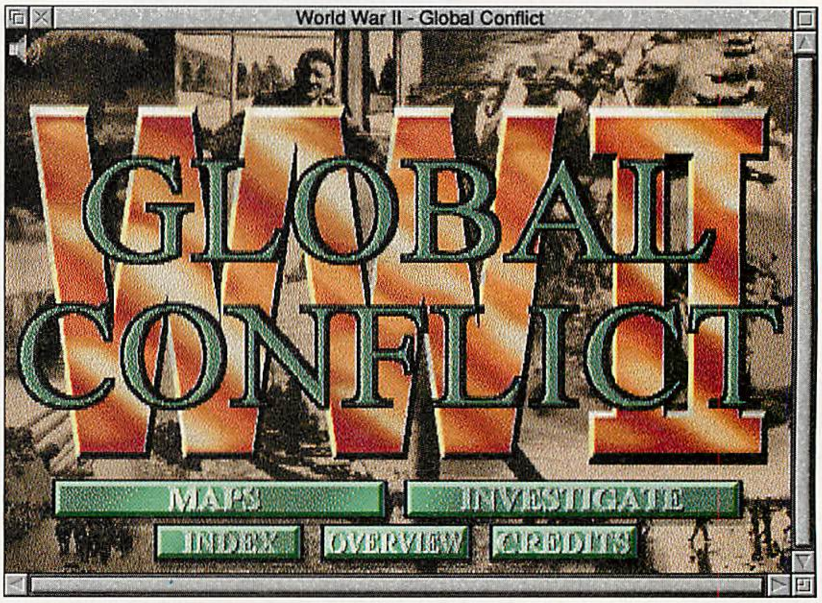
The Datafile has made available *Gothic & Medieval Fonts Pack One* for a Category B prize-winner, *Gothic & Medieval Fonts Pack Two* for a Category C prize-winner and *Letraset 25 Font Pack One* for Category D prize-winner. These are superb font sets.

Desktop Laminations has donated three prizes for each of the four categories. Winners will receive *MMViewer/*CD, PD CD-ROMs and CD-Circle subsriptions.

A copy of *The Greeks*, kindly donated by Hampshire Microtechnology Centre, is awaiting one of the prize-winners in Category A. This is a complete resource for Key Stage 2 History and



4Mation is offering several prizes, including the ever-popular *smArt*.



The *World War II* CD-ROM from Academy TV.

includes all supporting material.

Icon Technology has generously provided a prize for each of the four categories. A Category A and B winner will each receive a copy of *TalkWrite*, a Category B winner will receive *EasiWriter,* while a copy of *TechWriter* will go to a prize winner in Category D.

For those running an Acorn network, i-cubed has generously provided a parallel port tape streamer with software for the school or college submitting the Category D winning entry. I've tested this product on my school network and it's a super piece of kit.

The Jumping Bean Company has provided a copy of *Noddy's Playtime* for a Category A prize winner. This delightful program is certain to enthral any KS 1 pupil using Enid Blyton's popular character as a vehicle for some very carefully thought-out problems.

Papersoft has provided a set of Software Templates for Avery Laser Labels or Software Templates for Avery Inkjet Labels for each category.

Studio24 requires no introduction, and Pineapple Software has kindly donated a copy for each of the four categories. For the few who still need convincing, read Jack Kreindler's article in the December issue.

Quantum has kindly donated a copy of *KeyStroke* for a prize-winner in each of Categories A and B and *Blinds* for a prize-winner in each of Categories C and D.

There will be a copy of *Sibelius 6* for each of Categories A, B and C, and *Sibelius 7* for Category D kindly donated by Sibelius Software. This software is fast becoming recognised as *the* music editing program, regardless of platform.

If you feel you're still on the hard shoulder of the Information Superhighway, Silicon Village has kindly offered a superb prize to the winning school in each category: a one year unlimited direct-dial free access to the Silicon Village. John Clarke Computing Ltd – upon whose host Silicon Village resides – has kindly donated a modem to each of the prizes making four complete communications packags.

For those entering in the competition in Category C, you could win a copy of *Orrery* kindly donated by Spacetech. The brilliant *PhotoDesk* is awaiting a lucky prize-winner in Category D.

Topologika has generously provided *Music Box* for Category A and *Navigator* for Category B. These are two very popular programs which were reviewed in the October issue.

XOB has generously contributed a Teletext card to the school providing the winning entry for Category C. This is a valuable prize which will be used by many subject areas to capture free up-to-the-minute information; see the Education page in the November issue.

Thank you

Thank you to all the companies who have kindly donated prizes. If there are any more companies who would like to donate prizes, could I please ask that you send me details within two weeks of reading this so I can include the information in the next competition update. In the meantime, why not get ready to enter: it's definitaly worth having a go. AU

competition

Education Competition ACORN USER

ACORN USER
Education Competition

Education Competition ACORN USER

Name of School/College ______

Address of School/College ______

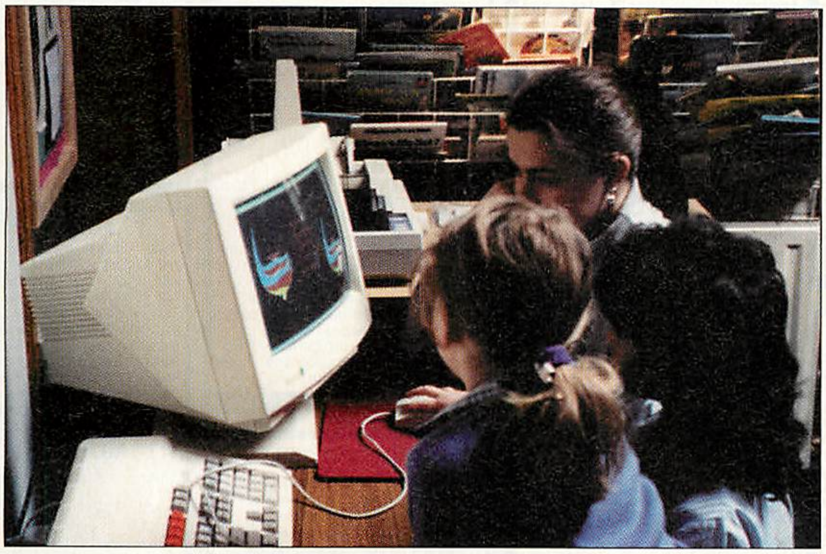
______

Postcode ______ Telephone ______

Teacher contact *Mr/Mrs/Miss/Ms/Other* ______

Category [A] [B] [C] [D] *Tick ONE only*

Affix two Acorn User Education Competition Tokens from any two issues of Acorn User. Send this form together with the entry, both on disc and as a hard copy, to reach us by 31st March 1995.



Acorn in use at Culcheth Hall School

Catching up

A sub-editor's work is never done. Judith Chapman takes off her production hat, puts on her investigative one and finds out how computer studies has changed since she left school.

It's been five years since I left school, and what a difference that time has made. Throughout my education at Culcheth Hall School in Altrincham, Cheshire I never used a computer. Don't get me wrong, there were computers available, but I was pushed into taking other subjects.

By the time I left school and started university I was computer *illiterate*. I remember panicking when I sat in front of a computer to type up my first assignment. I could not believe I had been persuaded to learn about other subjects because computers were not as important; yet here I was in my second week at university, and to me it was the most important area to understand.

Back to school

Imagine my surprise when, on returning to my old school earlier this year, I discovered a computer centre with new improved machines and facilities. But they weren't PCs or Apple Macs, they were Acorn computers, including one new Acorn Risc PC. Also scattered around the room were printers, plotters, scanners, a modem, mulitmedia unit, midi keyboards and Lego Control Lab equipment.

Intrigued by this vast improvement, I took it upon myself to discover what had been the cause of this sudden change and why Acorns were responsible for it. I must add that, as Production Editor for this magazine, I have very little knowledge of how Acorns work. It is my job to edit the work and ensure it reads correctly before and after page layout. This, as you know, is done on an Apple Mac. So, with my ignorance in hand, I approached the head of Information Technology, Ann McIntyre, to discover the answers.

Ann was more than happy to define the situation. When the computer studies course was first introduced at Culcheth, BBC computers were bought. When the computers needed updating they chose Acorns because of the excellent educational RISC OS software available at that time and because some of the BBC software could then continue to be used with an emulator.

The computers are now networked and equipped with all the necessary packages including *Impression II, Fireworkz, Pipedream, Squirrel, ArtWorks, Genesis* and *Rhapsody*. Anne stated that at the change-around time there were difficulties to overcome that could only be rectified by the experts. Here she owes her gratitude to the technical support teams at the software houses, in particular Mark Colton of Colton Software, and to Computer Concepts and Longman Logotron who sorted out all her problems over the telephone.

Such was the impression that the computer centre made in the school that other departments were eager to use them as well. The school's library is now fully computerised and the Science department now uses the old BBCs to control experiments – something which was certainly never considered in my day. The modern languages department uses *Campus 2000* to access MINTEL and to get daily reports in French, German and Spanish for their A level students. Not only that, but the youngest girls in Reception – four and five-year olds – also have access to Acorns and use *Talking Pendown* to assist their reading and have typed their own stories, illustrating them with scanned drawings.

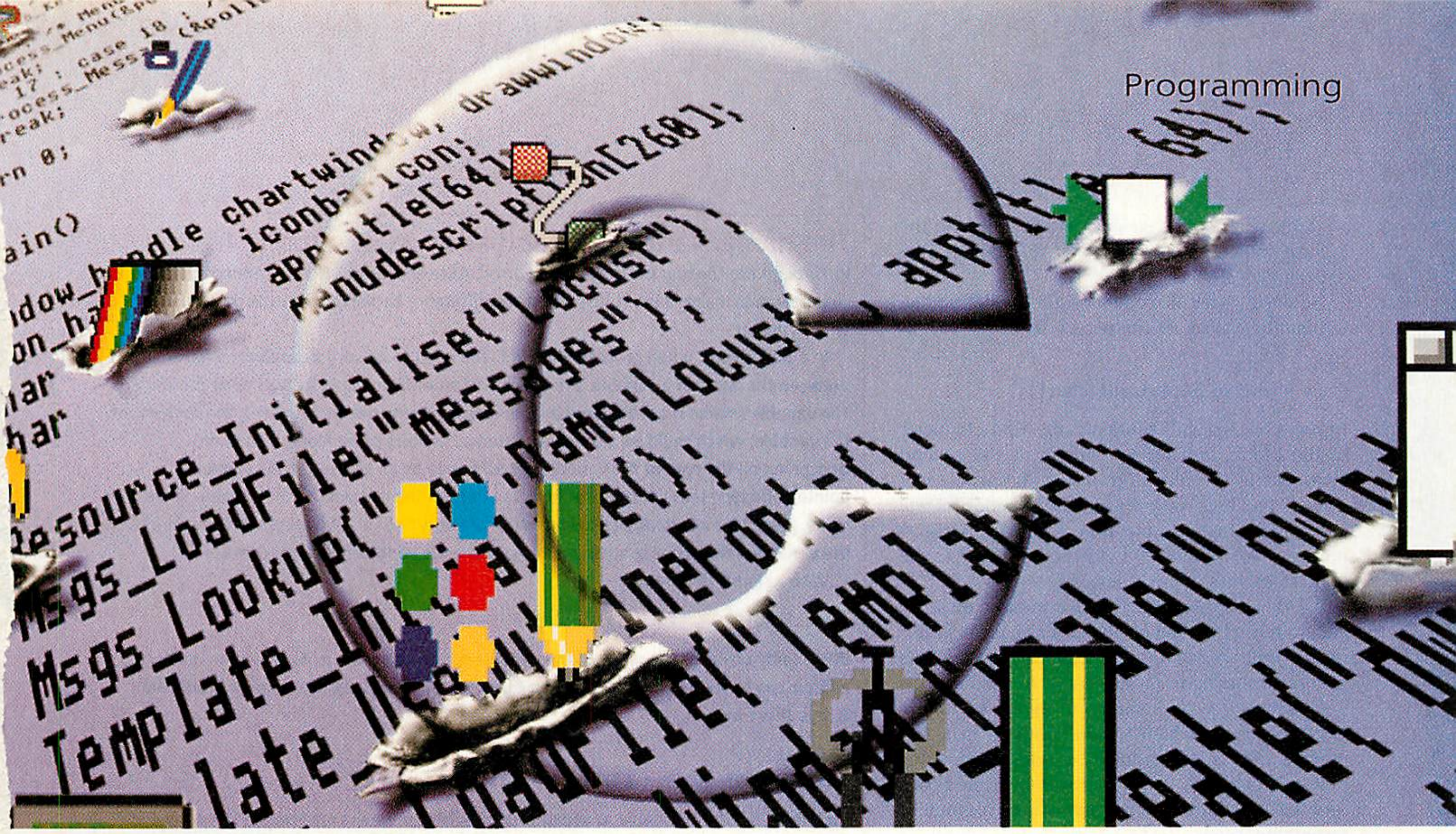
Up to year nine (third year seniors) IT is a compulsory subject. Here pupils learn how to log onto the network and to use wordprocessors, spreadsheets, databases, DTP, electronic mail, music and so on. After year nine, Information Systems and IT courses are popular options for GCSE.

The Sixth formers are taking the GCE AS Level for the first time, When I visited the school I watched one pupil testing a game she had designed as part of her coursework with some of the girls in Reception. It's a Click & Play game which, while entertaining the youngsters, also assists their reading and number skills by asking them to count penguins, say what the penguins are doing, and so on. When the girls have the answer they click on the relevant words/numbers at the bottom of the screen which then scrolls to reveal the next picture.

One major document produced each year by the girls is the school magazine. When I was at school the articles were written by the pupils and the teachers, typed by the secretaries, checked by the English teacher, cut and pasted onto A4 paper and then copied to produce the required number.

These days the magazine is computerised. All articles are typed on computers using *Impression II*, copied over into a universal file and then the pages are laid out with the relevant illustrations. They are then sent to film and reproduced by a printing firm. It's an easier and more efficient system – and one that seems like ours – that was welcomed with open arms.

The pupils stated that they have no problems in doing page design on Acorn computers, and having been shown their ease of use, I must admit maybe one day I might be converted. AU



C for yourself

Continuing the look at pointers and arrays in C, David Matthewman studies how to access blocks of memory with pointers.

Last month, I looked at how to initialise pointers to point at blocks of memory using the malloc() function. For instance:

```
int *ptr;
ptr = malloc(100*sizeof(int));
```

sets the variable ptr – with type *pointer to int* – to point at a block of memory big enough to hold 100 integers; 400 bytes, on the Archimedes. Because of the correspondence between arrays and pointers, once you have done this you can get at any particular element in the block by using pointer as an array:

```
ptr[0] = 35;
total += ptr[15];
last_entry = ptr[99];
```

The first of these statements could also be written in pointer notation as:

```
*ptr = 35;
```

literally 'Let the integer pointed to by ptr have the value 35.' Since ptr by definition points to the array element ptr[0], this does what we want.

Indexing pointers

We now need a mechanism for pointing to other elements in the array. In fact, this is very easy; to point to the element ptr[n] we use *(ptr + n). The brackets are necessary because the dereferencing operator * has a higher precedence than the addition operator +, so the expression *ptr + 1 takes the number pointed to by ptr and adds one to it. We can therefore write the last two array statements as:

```
total += *(ptr + 15);
last_entry = *(ptr + 99);
```

should we so wish.

Why *should* we so wish, anyway? Well, there are a number of reasons, many relating to subjects that we have not covered yet. In some cases it may be more intuitive to write the expression in this way, or it might lead to more compact source code, or it might cause the compiler to generate better machine code.

The pointer types

Programmers new to C, especially those who have come to it from BBC BASIC, tend to assume that a pointer is a pointer is a pointer, and that it is identical with the int type. After all, this is the case in BASIC, where the address of a variable or the pointer to a block of memory is an integer variable. This is *not* the case with C, however.

This should in fact be apparent from the previous example. The variable ptr points to the start of a block of memory containing four-byte integers. The variable ptr + 1 points to the second integer in the block, in other words its value is an address four bytes higher than ptr itself. The value of ptr + 2 is an address eight bytes on from

ptr, and so on, up to ptr + 99 which points to the highest integer in the block at an address 396 bytes higher than ptr itself.

However, what if we had originally defined ptr to point to a block of characters, with:

```
char *ptr;
ptr = malloc(100*sizeof(char));
```

In this case, ptr still points to the first character in the block, and ptr + 1 points to the second character in the block. However, because sizeof (char) is one byte, ptr + 1's value is an address *one* byte higher than ptr, not four. Likewise, ptr + 99 points to an address 99 bytes higher than ptr, the highest address in the block.

All this implies that the C compiler must be able to tell what type of object a pointer is pointing to. Bear in mind that – although we have so far only come across a few modest-sized objects – C allows for all manner of types of totally arbitrary length which we will look at in a few months. All of these may be referenced using pointers. This is why there is not just one 'pointer' type in C, but any number of 'pointer to something' types.

Casting and arithmetic

Since pointers all have in common the fact that they point to a position in memory – they are all in some sense *addresses* – it may sometimes be useful to assign the value of one pointer to another pointer of a different type. This should be done with extreme caution, but it can be done with casting. Prefixing a variable by (type *) gives it the type 'pointer to type'. For instance:

```
char *pchar;
int *pint;
...
pchar = (char *) pint;
```

However, pchar *still* has type 'pointer to char'. pchar + 1 will point to one byte higher than pchar, *not* to the next integer in the list, which would be pointed to by pint + 1.

Because of this problem, casting between pointers should be avoided wherever possible. Another common cast involving pointers is to cast them to int variables. It is true that on the Archimedes all the pointer types and int are physically identical, but this may not be so on other machines. Normally, such casts would be reserved for circumstances where we wish to output the value of a pointer, rather than the value of the object to which it is pointing. Remember that just because a pointer can be represented by an integer, it does not mean that adding one to the pointer will add one to its integer representation. If it is a pointer to int then it will add four, and so on.

One cast to int which is permitted – and is done automatically by the compiler – is setting a pointer to zero. Zero or NULL is a special value which indicates that the pointer may not be used because it has no memory to point at. It is returned by the malloc() function if it cannot allocate memory for some reason. Attempts to use a NULL pointer by dereferencing it using * are invariably nasty.

We have already seen that it is both legal and useful to add integers to pointers. Two pointers may not be added, but pointers *of the same type* may be subtracted to give the distance between them in units of whatever is being pointed at. Of course, this does not always give a sensible answer unless both pointers were pointing at the same block of memory.

Pointers of the same type may also be compared; a pointer is greater than another pointer if it points to a higher area of memory.

Deallocating pointers

Once we have allocated some memory using malloc(), it stays allocated until we end the program, even if the program has finished using it. If we were to continue to allocate memory to pointers using malloc(), sooner or later we would run out of memory. It is therefore good practice to de-allocate any pointers which are not used using the free() function:

```
free(ptr);
```

This frees up the memory used by ptr, and sets ptr to have a value of zero, or NULL. It is still possible to run out of memory due to memory fragmentation, of course.

That's it for pointers for the moment. Next month, I shall look at functions in C. AU

The name, value, type and address of a variable

In *Through the Looking Glass* by Lewis Carroll, Alice encounters Humpty Dumpty, a character who makes a lot of fuss about the difference between the name of a word and what it means.

In a similar way, when programming in C you need to be very clear about the distinction between the *name* of a variable, the variable's contents or *value*, its *type* and its *address*. The variable's name is a label, used by C to identify the variable. Its value is the contents of the variable, which could be a character, integer, floating point number or so on, depending on the type of the variable. It could even be an address, if the variable is a pointer. The type tells the compiler how to interpret the contents of the variable to get the value, plus other information like how much memory the variable takes up. The address of the variable is the actual space in memory where the variable's contents are stored.

With a simple declaration:

```
int i=10;
```

this is fairly obvious. The name of the variable is i, its value is ten, its type is int and its address can be found by the expression &i. However, things get more complicated with arrays. If we write:

```
int ar[3];
ar[0] = 49; ar[1] = 64; ar[2] = 81;
```

then the type of the variable ar depends upon whether we are referring to the *array* ar or the *pointer* ar. The former is an array, with three elements whose values are 49, 64 and 81, and type integer array. The latter is a pointer, whose value is the address of the first array element and whose type is pointer to int. For this reason, when referring to the *array*, I will write it as ar[], to ensure that the names of the array and of the pointer are different.

With this done, I can write either:

- the name of the variable is ar[], it is an array with the three values 49, 64 and 81, its type is array of int and its address is given by the expression &ar[], or more simply by ar, though of course it occupies a block of memory starting from this value.
- the name of the variable is ar, its value is the base address of the block of memory, its type is pointer to int and its address is given by &ar.

Of the two, the second is usually preferable. Pointers and arrays are equivalent, and it would be confusing to have two different types for what is effectively the same data structure. Because of this, when I am referring to an array/pointer, I will use the pointer variable unless I am specifically talking about an array. Remember though that the name of the array variable is ar[]; the variable ar without the square brackets is a pointer with a value the same as the value of the *expression* &ar[0], rather than the value of the *array* ar[].

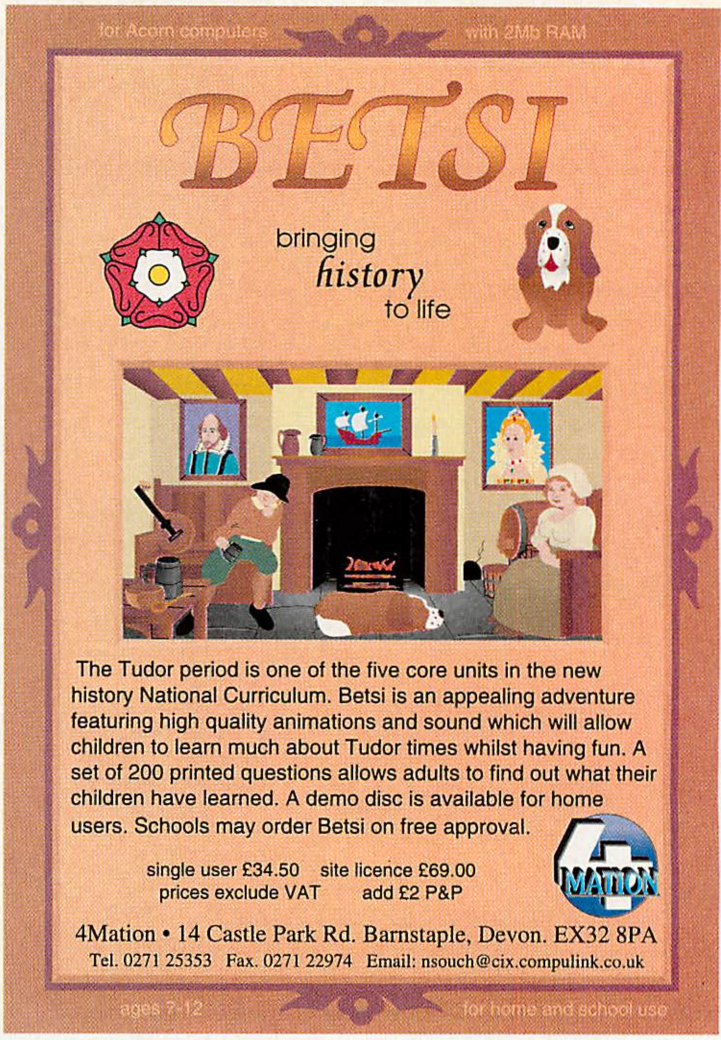
The program *Humpty* on the cover disc sets up a number of variables and then prints out their name, value, type and address of each variable.

On the disc

Apart from the program *Humpty*, there is the third version of the photograph database *Kate3*. This uses only pointers; all arrays have been removed.

This has largely been done for effect. The code produced is convoluted in places, and a mixture of pointer and array notation would more usually be used in a program like this.


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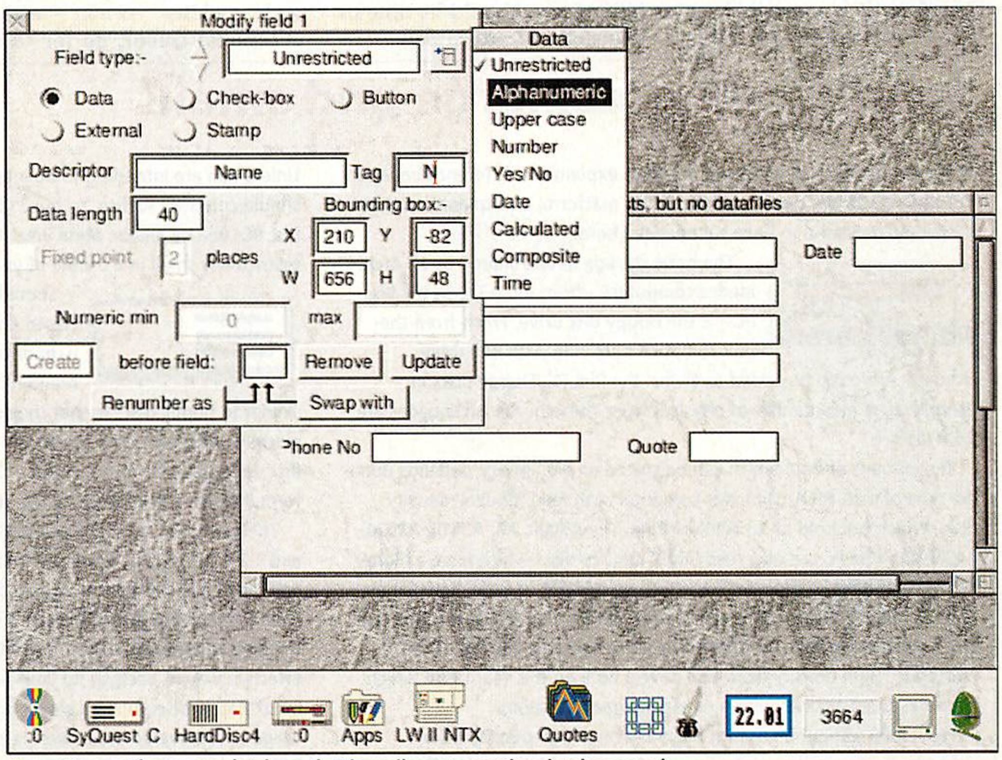

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for home and school use

Questions & answers

A range of 486 co-pro-related questions from a Risc PC owner in Rochdale, and a summary of storage devices for your Archimedes.

Q I am going to be opening my own translation/finance company, and I was wondering if there was a powerful but easy-to-use database available for the Acorn platform. I am new to the Acorn machine – I have a Risc PC 600 with 8Mb of memory. I want to be able to make a form so that when someone asks me for a quote all I have to do is type in their name, address, date, cost and so on.

I would like it to be a system you would use at say a library or an insurance company. For instance, say I am finding a book in the library, all I have to do is type in the author's name and the book is found. In the same way, if I need to find a client's name then all I should have to do is type in the surname. It would also be good if it could index surnames from A to Z. I would also like to be able to print people's quotes.



PowerBase, a Shareware database that is easily up to routine database work.

I would also like to know if it is possible to store PC programs on my Risc PC's 420Mb hard disc, using the 486SX PC card, because almost all PC programs use the hard disc to run properly.

I am stuck on something. I have a choice of two excellent printers but I don't know which one to choose. My choice is between the BJC-600 or BJC-4000 colour bubble jet printer. Please help; these will be used for things like word processing and quotes, and printing full 24-bit colour DTP pages. Both the quality and speed are important. They both print at 360 by 360dpi in colour, but the BJC-4000 prints at 720 by 360 in monochrome and is also faster.

I would also like to know if there is a *Turbodriver* for the BJC-4000? Incidentally, a friend of mine has an A5000 with a BJC-600 printer, and I was shocked when he told me that when he wanted to print he had to turn off his computer, then turn on his printer and then turn on his computer again (phew). Do you have to do the same with the new *Turbodrivers*?

I saw a colour scanner in a PC magazine the other day for £158, which I think is a bargain. I was just wondering if it would connect to the Risc PC with its PC card. The magazine said that the connection started with the insertion of a 16-bit half-length interface card. There is a lot of software with it, but I should be able to use it because of the 486 card.

If I scan my image and then save it as one of the file types supported by *ImageFS*, will I be able to drag and drop it into any RISC OS application? I will be translating text using *Universal Word* – is it possible to drag and drop this into *Publisher* or some other RISC OS application using *ImageFS*?.

If you are using a PC word processor with a Risc PC using a 486SX card, can you print your work just as if you were working on a PC?

And finally, can you connect the Acorn to an Amiga, and will speakers made for a walkman connect to the Risc PC?

Mohammad Anees Rana
Rochdale

A On the subject of the 486SX PC co-processor, it is important to realise that any answers I give are speculation, since the product has not yet appeared. However, I can give some pointers.

It will certainly be possible to store PC programs on the Risc PC's hard drive. This is indeed possible with all current versions of PC emulation on the Archimedes. Printing from PC programs has always been a slightly grey

area, but hopefully the 486 co-processor should be able to share the parallel and serial ports with the ARM chip with no problems.

Scanners and other devices which connect via PC expansion cards are another matter, as these expansion cards will not fit in the podule expansion slots on the Archimedes. It is currently impossible to connect devices such as these, although an adaptor and drivers to use it from the 486 card should be appearing soon.

One thing that the 486 card will *not* do is make DOS and Windows programs behave like RISC OS applications. Therefore, it is unrealistic to expect to be able to 'drag and drop' text from a Windows application to a RISC OS one, not least because drag and drop is totally alien to the Windows environment.

Files saved from a Windows application may be accessed outside the PC emulator from RISC OS, so you may drag and drop a *Universal Word* file to *Publisher*. However, *Publisher* will have problems in understanding anything more complicated than plain text, so any *Universal Word* text formatting information will be lost.

This is not true of bitmap files such as TIFFs which, by using *ImageFS* and *Publisher's* graphics loading capabilities, you should be able to transfer to documents in RISC OS with no problems.

As to which database to choose, it sounds as though any of the commercial databases would do what you want. You should also try *PowerBase*, which you can get from most PD libraries, which is a Shareware database – basically, you try it and if it does what you want you send the authors £10. This way you haven't lost anything, and *PowerBase* is powerful enough to manage what you say you want.

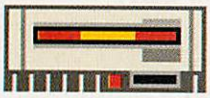
The choice between the BJC-4000 and BJC-600 was covered in our review in the last issue but to summarise: if you are doing mostly black and white work with occasional colour, go for the BJC-4000; for mostly colour work, go for the BJC-600. Your friend's problem with his BJC-600 puzzles me; this is not usually necessary when using *any* printing software, whether from Acorn, Oak or CC.

Connecting Arcs and Amigas certainly isn't easy – they won't even read each other's discs. It should be possible via the serial port, perhaps one of our readers who may have tried this could enlighten us?

And finally, speakers for Walkmen will certainly connect to the headphone socket, giving a half-decent sound from the Risc PC. Load *Simon the Sorcerer* and turn up that volume... AU

Storage devices, large and small

At the Acorn World show, I was asked to explain the difference between the various storage devices on the Acorn platform, an explanation that I felt would be useful to have summarised here.



The basic storage device shared by all Archimedes computers – from the A310 to the Risc PC – is the floppy disc drive. Fresh-from-the-box computers are sold with one drive, although more can be added to all but the Risc PC. Floppy discs in general come in a number of physical sizes; those in the Archimedes are 3.5in discs.

The amount of data which can be stored on a 3.5in disc depends upon the type of disc. All Archimedes computers can read 'double' density discs, which can hold up to 800K of data. The A5000, A4, A3010, A3020, A4000 and Risc PC can also read 'high' density discs which have a higher density magnetic coating and can store up to 1.6M of data. Both forms of disc have a hole in their plastic casing on the near left as it is inserted into a drive, which can be covered by a tab allowing the disc to be written to. High density discs also have a hole on the near right, which identifies them as discs with a denser magnetic coating.

Pre-A5000 computers cannot normally read high-density discs, although Beebug sells an interface card to allow high density disc drives to be connected to them.

Floppy discs are excellent for exchanging data between computers, including between Archimedes computers and other platforms. Most files, except for large graphics files, can be transferred in this way, and of course the majority of Acorn software is distributed on floppy discs. The problem with relying on them as your only storage medium is that they can only hold a relatively small amount of data. You will find yourself having to swap discs more and more as you try to do more complicated tasks with more powerful applications.



This is where a hard disc helps. A hard disc is like a permanent floppy disc, but can store much more data which it reads and writes much faster. Early hard discs started at 20Mb, which is perfectly adequate for *!System*, some fonts, several applications and so on, but these days they tend to start at a minimum 80Mb. Hard discs can be fitted to all Archimedes computers, although fitting one to the A310 or A3010 is not cheap.

As to the size needed: Parkinson's law operates, as the bigger your hard disc the less meticulous you will inevitably be in keeping it tidy. Unless you are intending to do intensive graphics or DTP work, 100Mb should currently suffice, so the 210Mb which comes with the lower-end Risc PCs will be ample. Mind you, it is likely that even this will seem restrictively small in a couple of years.



Should you wish to exchange large quantities of data with someone else, 'removable' hard discs are an option. Often known by a brand name as 'Syquest' discs, these are similar to floppy discs in that they can be removed and taken to another machine, although their speed and capacity is closer to a standard hard disc. Using *MacFS* from Computer Concepts (the full version), discs formatted on a Macintosh can be read and written.

There are two standard physical sizes of removable hard disc: 5.25in and 3.5in. The 5.25in drives are more common, but the 3.5in ones are gaining in popularity. One common use for these discs is to back up data from a fixed hard disc; although the drives cost several hundred pounds the discs themselves cost under £50, and can therefore be a very cost-effective way of backing up your precious data (you can back it up to a lot of floppy discs, but it's slow). So-called 'optical' discs are similar in usage to removable hard discs – although they look different, more like 3.5in floppies – but optical drives are rare on the Archimedes platform.

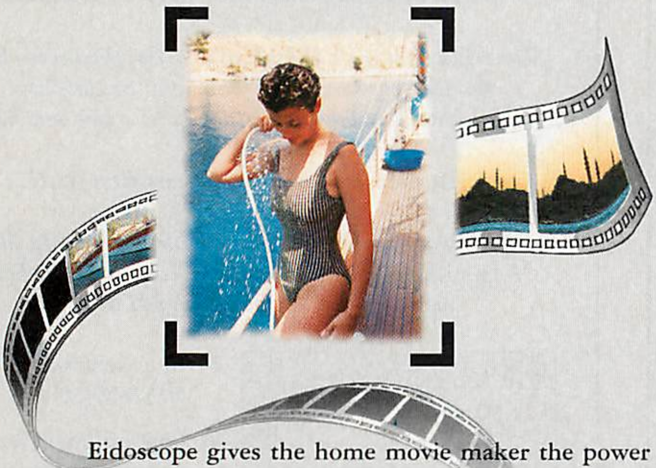
Another method worth considering is a tape streamer. Here the Archimedes goes full circle back to its BBC micro roots with a storage device conceptually similar to a cassette tape. Tape streamers can hold vast quantities of data, but can take a while to retrieve it if you do not start in the right part of the tape.



CD-ROM drives are starting to take off on the Acorn platform in a big way, with Acorn's recent £29 offer of a CD-ROM drive with a Risc PC. CD-ROMs can hold around 650Mb of data, although they are a lot slower than standard hard discs. The main difference is that – as the name CD-ROM implies – they are read-only devices. You can neither write to them nor delete files from them. CD-ROMs are excellent education tools. Because of their high storage capacities they can hold text, pictures, sound samples and animations in a combined multimedia package. Unfortunately the range of CD-ROMs available for the Acorn is limited at the moment, although many of the PC titles are accessible either with special dedicated readers such as *MMViewer* from CD-Circle or shortly by using the 486 co-processor in the Risc PC.

David Matthewman

EIDOSCOPE



Over £3,500

of professional video editing software condensed into Eidoscope for just

£169 +VAT

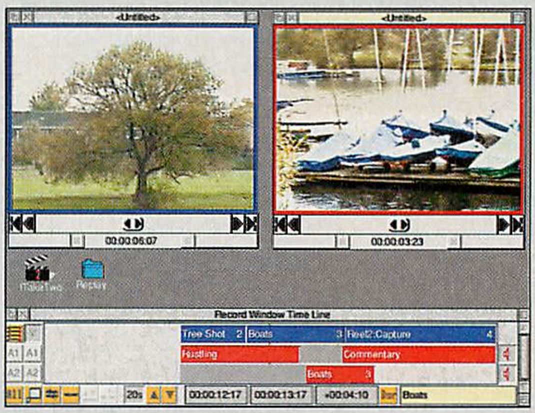
Eidoscope gives the home movie maker the power to edit video on the Risc PC. It is based on a sophisticated system used by professional video editors. Designed by editors for editors, it supports many of the features available to professionals including:

◆ Easy to use editing control panel ◆ Real time edits ◆ Real time mixes and wipes ◆ Full video/ audio synchronization control ◆ Editing and mixing two audio tracks simultaneously ◆ Importing sprite animations ◆ Exporting single frames for use in story boards ◆ Fully compatible with other Acorn packages for use in titling ◆ 12½ frames per second ◆ Resolution of 160 x 128 pixels ◆ Over 32,000 Colours ◆ Full screen playback

"For quite a remarkable price, practically all the amateur would ever dream of in a video editing suite." *Acorn User*

"Eidoscope...emulates the layout of professional editing suites with perfection, facilitating all the commonly used effects with remarkable ease." *Acorn User*

"Eidoscope gives the amateur a set of video editing tools powerful enough to do any professional proud." *Richard Wilkinson — Professional Video Editor*



To run Eidoscope you will need:

◆ Acorn Risc PC ◆ 4 Megabytes RAM ◆ Eagle M2 card — available from Computer Concepts*

EXCLUSIVE TO THE RISC PC

Acorn RISC PC

Computer Concepts Ltd

Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX, Tel: 01442 63933, Fax: 01442 231632, Email: Info@CConcepts.co.uk

*The Eagle M2 card digitizes and compresses videos in real time from camcorder or standard VHS tape machine and stored direct to hard disc.

The Acorn User Awards 1994: Eagle M2 card Winner: "Best Expansion Card" Runner up: "Most Innovative Hardware"

SOFTWARE

VIDEO EDITING SYSTEM

EIDOS

Acorn customer hotline

Essential information for all Acorn users, compiled by Dave Walker of Acorn Customer Services exclusively for Acorn User.

Anatomy of a Monitor Definition File

Unlike earlier machines, Risc PCs take details of the screen modes a given monitor can display from a Monitor Definition File (MDF), a number of which reside in *ADFS::4.$.!Boot.Resources.Configure.Monitors*, subdivided by monitor manufacturer. An MDF is plain-text, however it is not advisable to modify these files manually. A Monitor Definition File has the parameter set:

```
file_format: format
monitor_title: title
DPMS_state: state
```

These three parameters only appear at the start of an MDF; the following segment is repeated for each mode:

```
startmode
 mode_name: mode_name
 x_res: x-resolution
 y_res: y-resolution
 pixel_rate: pixel_rate
 h_timings: hsync, hbpch, hlbdr, hdisp, hrbdr, hfpch
 v_timings: vsync, vbpch, vtbdr, vdisp, vbbdr, vfpch
 sync_pol: sync_polarities
endmode
```

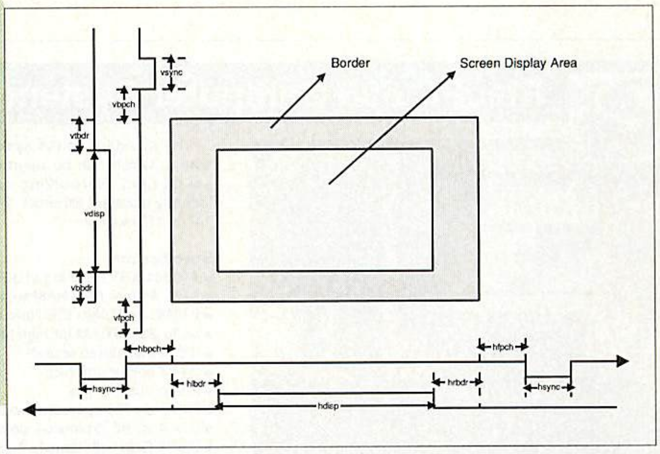
where:

mode_name is a textual name for the mode that will be used in the display manager's mode menu. It is possible to prevent defined screen modes from appearing in the modes menu by leaving this field blank. Mode names are limited to 19 characters, and may contain spaces.

x-resolution: number of pixels displayed across the screen
y-resolution: number of rasters (pixels) displayed vertically
hsync: width of horizontal sync pulse (must be a multiple of two)
hbpch: width of horizontal back porch
hlbdr: width of left border (hbpch + hlbdr must be a multiple of two)
hdisp: number of pixels displayed horizontally (which is normally the same as the x-resolution)
hrbdr: width of right border
hfpch: width of horizontal front porch
vsync: width of vertical sync pulse
vbpch: width of vertical back porch
vtbdr: width of top border
vdisp: number of rasters displayed vertically (pixels)
vbbdr: width of bottom border
vfpch: width of vertical front porch
pixel_rate: pixel rate in kHz
sync_polarities: a number indicating what kind of sync signals are required. The options are:

0 hsync normal, vsync normal
1 hsync inverted, vsync normal
2 hsync normal, vsync inverted
3 hsync inverted, vsync inverted

All values on the h_timings line are in units of pixels, and all values on the v_timings line are in units of raster lines. To convert between



A guide to all the parameters in the Monitor Definition File.

these units and the timings described in the technical notes accompanying your monitor, use:

$$Frame\ rate = \frac{pixel_rate}{\sum(h_timings) \times \sum(v_timings)}$$

$$Line\ Rate = \sum(v_timings) \times frame\ rate$$

$$Pixel_Rate = \sum(h_timings) \times \sum(v_timings) \times frame\ rate$$

More detail is available in Application Note 254, available from Acorn dealers and downloadable by anonymous ftp from ftp.acorn.co.uk.

Postcards From The Edge

At and soon after the Acorn World Show there were a number of romours and chinese whispers flying around. Following on from these and the discussions that the developments we showcased there have evoked, here are a few notes to clear up any confusion.

Regarding FileCore – Acorn is making a small change to the interface specification of FileCore. The change involves the addressing of data on the disc. Currently, this address is passed as a 32-bit quantity and is the drive number and a byte offset, but this is changing to the drive number and a logical block number which increases the range of addressable data.

Although this would theoretically lead to a 256Gb maximum disc size, the structures of FileCore prevent this. The maximum size we are recommending for IDE-based filesystems under the new module set is 4Gb. A 'new structure disc' can be identified by looking at the disc size record. Both SWI FileCore_DiscOp and SWI FileCore_MiscOp will be re-coded to distinguish between the two types of disc.

Those filing systems for which block addressing would be appropriate will also require modification so that they are able to inform FileCore to return a block number.

As the filing system is such a critical part of RISC OS, Acorn will be performing a great deal of soak-testing on these new modules, hence it is not possible to speculate on a release date. For further developments, watch this space.

Acorn Customer Services
Acorn Computers Ltd
Acorn House, Vision Park, Histon
Cambridge CB4 4AE
E-mail: customer.services@acorn.co.uk

Watford Electronics

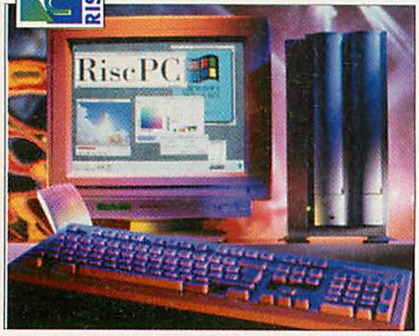
Jessa Group of Companies – Established 1972

Mail Order & Showroom: Jessa House, 1 Finway, Dallow Road, Luton LU1 1TR
Tel: 01582 487777 Fax: 01582 488588

Showroom Only: Jessa House, 250 Lower High Street, Watford WD1 2AN
Tel: 01923 237774 Fax: 01923 233642



RiscPC 600 Computer Systems



The RiscPC from Acorn offers all the traditional strengths of RISC processing, and a great deal more, at a remarkably affordable price. Based on a 30MHz ARM610 processor, the RiscPC simply leaves the competition standing.

It is the world's most cost-effective 32-bit RISC computer. The graphics on the RiscPC are astounding - 24-bit colour (2Mb VRAM required) at resolutions up to 1600 x 1200 pixels. The memory capacity starts at 2Mb and can be expanded to a massive 256Mb. A special slot for a 2nd processor is provided, allowing you to add an additional ARM processor or any other processor, so allowing easy low cost access to DOS and Windows based applications.

The standard sound system offers 8 channel stereo sound, which can be upgraded with the optional 16-bit sound card. Networking options include Econet and industry standard Ethernet. There is also a choice of either 14" or 17" monitors.

Specification:
- ARM610CPU running at 30MHz
- 2Mb, 4Mb or 8Mb RAM expandable to 256Mb
- 210Mb or 420Mb IDE Hard Disc Drive
- up to 2Mb VRAM for high resolution graphics
- 8 channel stereo sound
- 24-bit colour graphics
- 2nd processor slot
- RISC OS 3.5 operating system in ROM
- 2 or 4 32-bit expansion slots (expandable to 8 slots)
- 3.5" 1.6Mb high density floppy disc drive
- 5.25" drive bay for floppy drive or CD ROM drive
- 14" EPA compliant SVGA monitor (AKF60)
- 12 months On-site warranty

RiscPC Upgrade Options

Memory Upgrade Options

ARA0340/U	upgrade from 2Mb to 4Mb RAM	£59.00
ARA0350/U	upgrade from 4Mb to 8Mb RAM	£109.00
ARA0360/U	upgrade from 8Mb to 16Mb RAM	£249.00
ARA0410/U	upgrade from 1Mb to 2Mb VRAM	£79.00

Hard Disk Upgrade Options

ADA1520/U	upgrade from 210Mb to 420Mb IDE hard drive	£119.00
ADA1530/U	upgrade from 210Mb to 540Mb IDE hard drive	£179.00

Monitor Options

MKA1640/U	upgrade from 14" to 15" Aries 6000 monitor	£99.00
MKA1620/U	upgrade from 14" to 17" Aries 7560 monitor	£299.00
MKA1670/U	upgrade from 14" to 17" Acorn AKF85 monitor	£379.00

Miscellaneous Options

APA0250/U	upgrade to Duel speed CD ROM drive (CAA300)	£179.00

RiscPC 2M HD210
- 2Mb RAM expandable to 256Mb
- 210Mb IDE Hard Disk Drive
- 2 expansion slots
- 14" EPA compliant SVGA monitor
- 1Mb VRAM for enhanced graphics

£1219

RiscPC 5M HD210
- 4Mb RAM expandable to 256Mb
- 210Mb IDE Hard Disk Drive
- 2Mb VRAM for enhanced graphics
- 2 expansion slots
- 14" EPA compliant SVGA monitor

£1379

RiscPC 9M HD420
- 8Mb RAM expandable to 256Mb
- 420Mb IDE Hard Disk Drive
- 2Mb VRAM for enhanced graphics
- 4 expansion slots
- 14" EPA compliant SVGA monitor

£1659

Free VRAM upgrades with the above systems

Watford Learn & Play Pack

Pack includes: 10/10 English, Number, Spelling, Early + Junior Essentials, Virtual Golf, Dungeon, Break 147, Haunted House and E Type II.

Buy any Acorn Computer, Hard Drive upgrade or CD Rom Drive during January and we will supply the above Pack for only £45.

Multimedia Systems

Enter the world of multimedia with the RiscPC CDi system. Gain access to the massive amounts of data on CD ROM, study the masses of text, pictures and sound all interacting with each other. The ideal tool for educational use.

CDI System Specification:
- Dual speed CD ROM drive
- Aries Stereo Speakers
- 14" Multiscan monitor
- Hutchinson Encyclopedia CD
- Sherlock Holmes CD
- Really Useful v2 CD
- Acorn Video Clip CD

CDIA System Specification:
- Dual speed CD ROM drive
- Audio Mixer
- Aries Stereo Speakers
- Hutchinson Encyclopedia CD
- Sherlock Holmes CD
- Really Useful v2 CD
- Acorn Video Clip CD
- Pro Artisan v2 CD

- 5M CDI System £1579
- 9M CDI System £1849
- 5M CDIA System £1629
- 9M CDIA System £1899

Publishing Systems

One of the main uses of the Acorn RiscPC is Desktop Publishing. Utilising its immense processing power and high quality graphics, you will be able to produce professional quality documents without having to spend a lot of money.
The system comes supplied with the highly acclaimed Artworks graphics package and the powerful Impression Publisher DTP software.

Specification:
- 4Mb or 8Mb RAM expandable to 256Mb
- 1Mb VRAM for enhanced graphics
- Full support for 24-bit graphics – 16.7 million colours
- 14" Multiscan monitor as standard
- Impression Publisher DTP software
- Artworks graphics package

- 5M Publishing System £1469
- 9M Publishing System £1759

Acorn Pocket Book



The truly personal computer. With built-in word processor, spreadsheet, database, spell checker and scientific calculator, it provides all the basic tools for recording ideas, notes and data.

Pocket Book 256K Computer	£165
Pocket Book II 256K Computer	£219
Pocket Book II 512K Computer	£269

Pocket Book Accessories

A-Link	£40.00	Plotter Class Pk	£250.00
Parallel Link	£25.00	128K RAM Disc	£49.00
PC Link	£59.00	256K Flash Disc	£59.00
Mac Link	£65.00	512K Flash Disc	£85.00
Schedule	£16.00	OPL Editor	£59.00
Schedule Class Pk	£160.00	Mains Adaptor	£12.00
Plotter	£25.00		

0% Finance
available on all basic RiscPC systems, A4000 systems and A4 Notebooks. Call 01582 745555 for more details.

Acorn 32-bit RISC Computer Systems

A3010 Special Offers

A3010 Action Pack
includes computer with 1Mb RAM, expandable to 4Mb, Startwrite word processor, Zool game and demo versions of Lemmings, Fervour, Chuck Rock and Superpool.
only £249

A3010 Early Years
includes computer with 2Mb RAM, expandable to 4Mb, Talking Startwrite word processor, Gemini, Doris the Dotty Dog. Amazing Maths, Flossy the Frog, Mouse in Holland and Paint Pot.
only £319

A3010 Learning Curve
includes computer with 2Mb RAM, expandable to 4Mb, Acorn Advance integrated software suite, PC Emulator with DR DOS 6 and 8 demonstration versions of popular programs and games.
only £329

FREE Shoulder Bag with every A3010



Computer Systems

A3020 2M FD System + AKF52 Monitor	£699
A3020 2M HD System + AKF52 Monitor	£839
A4000 2M HD105 + AKF52 Monitor	£839
A4000 2M HD210 + AKF52 Monitor	£869
A4 4M HD60 Notebook	£1599

Upgrade Options

Upgrade to AKF50 Monitor	£120
Learning Curve Software Pack	£39
Home Office Software Pack	£85
Early Years Software Pack	£39

TO ORDER CALL OUR SALES HOTLINE 01582 745555
or FAX YOUR ORDER on 01582 488588

Access VISA AMERICAN EXPRESS

CD-ROM, Multimedia, Scanners & Monitors

CD-ROM Software

Some titles require additional software to run under RISC OS. These are marked as follows:
EB–Electronic Books: PaperOut software required
PD–PDSView software required

- PDSView £99
- PaperOut – Electronic Book player £49

Art, Graphics & Design
- Artworks v1.5 £169
- Artworks Clipart CD v1 £19
- Artworks Clipart CD v2 £19
- Art in the National Curriculum £75
- Pro Atrisan v2 £136

English & Literature
- Goldilocks £39
- Granny's Garden £30
- Illustrated Works of Shakespeare £23
- Karaoke Macbeth £49
- Karaoke Midsummer Night's Dream £49
- Living Poetry £49
- Listen & Read (EB) £39
- Oxford Reading Tree Talking Stories £39
- Sherlock Holmes £23
- Sherston Naughty Stories £79

Geography
- Counties of Great Britain £40
- Countries of the World £40
- Langdale Primary £99
- Map Skills £49

History
- Castles £40
- Changing Times £125
- Frontier 2000 £109
- Photobase: Victorians £49
- Picturebase: Victorian Britain £99
- World War II vol. 1 £130
- World War II vol. 2 £130
- World War II vols. 1 & 2 £249

Languages
- Directions 2000: French £140
- En Marcha: Spanish £140

Mathematics
- Cars – Maths in Motion £49
- Number Games £79
- Perspectives £79
- Picture Gallery £79
- Who Stole the Decimal Point? £79

Science & Technology
- Chemistry Set £149
- Science & Technology Library (EB) £39
- Collins Electronic Food File (EB) £29
- Science Series: Elements £130
- Science Series: Materials £130
- Inventors & Inventions £150
- Photobase: Science £49
- Understanding the Body £40

Nature & Environment
- British Birds £150
- Creepy Crawlies £49
- Dictionary of the Living World £49
- Earth Guide (EB) £39
- Environment Series: Land & Air £130
- Environment Series: Water £130
- Usborne Exploring Nature £125

Space & Astronomy
- Space Encyclopaedia £34
- Space Science Sampler (PD) £40
- Voyager Spacecraft (PD) £200

Educational Resources
- Acorn Video Collection Disc 1 £10
- Bitfolio 6 – clipart images £49
- Horizon Report £19
- Photobase: 1920s £49
- Photobase: 1930s £49
- Photobase: 1940s £49
- Photobase: 1950s £49
- Photobase: 1960s £49
- Photobase: Landscapes £49
- Sermec Treasure Chest £69
- SSERC Graphics Collection £99

Dictionaries & Encyclopaedia
- 19th Century Biographies £25
- CIA World Fact Book (EB) £29
- Concise Oxford English Dictionary and Oxford Thesaurus (EB) £29
- Hutchinson Gallup Info (EB) £29
- Hutchinson Guide to the World (EB) £29
- Hutchinson Encyclopedia £49
- Kingfisher Children's Micropedia £90
- Times & Sunday Times £178
- Times & Sunday Times Sampler £50
- Tekkie CD – Acorn PRMs on CD £99

CD-ROM Drives



CUMANA

All Cumana CD-ROM drives are supplied with all necessary connecting cables, driver software and interface cards.

Cumana Oscar CD-ROM Drive
- Dual speed drive with motorised drawer
- Kodak PhotoCD compatible
- 320ms access time
- Connects to parallel printer port

Oscar CD-ROM drive £219

Cumana Bravo CD-ROM Drive
- Dual speed drive with motorised drawer
- Kodak PhotoCD compatible
- 320ms access time
- Parallel port or SLCD versions

Bravo CD-ROM drive–Parallel port £289
Bravo CD-ROM drive–A3000 SLCD £289
Bravo CD-ROM drive–A5000 SLCD £289
Bravo CD-ROM drive–EMU SLCD £289

Cumana Victor CD-ROM Drive
- Dual speed multi-session drive
- Kodak PhotoCD compatible
- 320ms (402A), 210ms (632A) access time
- SCSI interface (not included)

CXX402A CD-ROM drive £289
CXX532A CD-ROM drive £289

The 602 and 604 CD-ROM drives employ a 6 disc autochanger, making it ideal for use on a network. 604 model is Quad speed.

CXX602 autochanger CD-ROM £479
CXX604 autochanger CD-ROM £969

Cumana Indigo CD-ROM Drive
- Dual speed multi-session drive
- Kodak PhotoCD compatible
- 320ms access time
- Connects to IDE Interface
- Fits in 5.25" drive bay inside RiscPC

CAA300i CD-ROM drive £189
CAA300iA CD-ROM drive £239

A version of the Indigo is also available for connection to a standard SCSI interface.

CAA401 CD-ROM drive £189
CAA631 CD-ROM drive £289

Optional CD Bundles

Bundle packs are only available at these prices when purchased with a CD drive.

Starter Pack
- Acorn VideoClip Collection CD
- Artworks Clipart CD
- Horizon Report
- Clares Pro Artisan v2 CD

£99

Primary Pack 1
- Creepy Crawlies CD
- Cumana Photo Album v1 CD
- Dictionary of the Living World CD
- Goldilocks CD
- Granny's Garden CD
- Sermec Treasure Chest CD

£175

Primary Pack 2
- Artworks Clipart CD
- Cars: Maths in Motion CD
- Sherston Naughty Stories CD
- Space Encyclopaedia CD
- Clares Pro Artisan v2 CD
- Hutchinson Encyclopedia CD

£250

Speakers & Accessories



- Aries Stereo Speakers £9
- Aries Hi-Fi Stereo Speakers £29
- Aries Hi-Fi Pro Stereo Speakers £35
- Aries Digital Stereo Speakers £49
- Aries Digital Plus Stereo Speakers £59
- Aries Screen Microphone £4.50
- Aries Stereo Headphones £4.50

Aries Monitors



EnergyPro 14" SuperVGA Monitor
- 14" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- EPA Energy Star compliant
- 800 x 600 non-interlaced resolution
- Horizontal frequency: 29KHz - 38KHz

£165

Alphascan Pro LR 14" Monitor
- 14" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- 1024 x 768 @ 72Hz (non-interlaced)
- 1280 x 1024 @ 60Hz (non-interlaced)
- Horizontal frequency: 29KHz - 70KHz

£199

EnergyPro 6000I 15" Monitor
- 15" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- EPA Energy Star compliant
- 1280 x 1024 @ 60Hz (non-interlaced)
- Microprocessor control
- Horizontal frequency: 29KHz - 70KHz

£259

EnergyPro 7560I 17" Monitor
- 17" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- EPA Energy Star compliant
- 1280 x 1024 @ 60Hz (non-interlaced)
- Microprocessor control
- Horizontal frequency: 29KHz - 80KHz

£499

To use the above monitors with an A300, A400 or A3000 machine, you will need a SuperVGA VIDC Enhancer and adaptor.

- SuperVGA VIDC Enhancer £29
- Multiscan VIDC Enhancer £15
- Arc to VGA Monitor Adaptor £9

Acorn Monitors

- AKF30 – 14" Med Res RGB £179
- AKF40 – 14" Med Res RGB £179
- AKF52 – 14" Med Res Multiscan £249
- AKF50 – 14" High Res Multiscan £299
- AKF60 – 14" High Res SVGA £319
- AKF85 – 17" High Res Multiscan £969

Flatbed & Hand Scanners

Canon IX-4015 Colour Scanner
The IX-4015 is a compact A4 flatbed scanner offering full 24-bit colour scanning up to a max resolution of 400 x 800 dpi. The scanner will also scan 256 grey scale images with a max resolution of 400 x 1200 dpi.

- 400 x 800 dpi resolution in colour
- 400 x 1200 dpi resolution in monochrome
- Connection via SCSI interface
- Spacetech Photodesk software
- TWAIN driver & Sleuth OCR software

£579

Aries ArcScan 3420 Scanner
The ArcScan 3420 is an A4 flatbed scanner for those who just want to use 256 grey scale images. With a resolution of 300 x 600 dpi it will provide high quality images for a fraction of the cost of other similar models.

- 300 x 600 dpi resolution
- 256 grey scale or monochrome operation
- 216 X 356mm overall scanning area
- Connection via SCSI-2 interface
- Spacetech Photodesk software
- ImageMaster software & TWAIN driver

£399

- Upgrade to Photodesk software £129
- SCSI-2 Interface for above £165

HP ScanJet IIcx Colour Scanner
The ScanJet IIcx is an A4 flatbed scanner capable of producing full 24-bit colour scans at a resolution of up to 1600 dpi.

- 400 x 800 optical resolution
- Single pass scanning process
- 24-bit colour and grey scale modes
- A4 scanning area (216 x 297mm)
- Connection via SCSI interface
- Spacetech Photodesk software
- TWAIN driver

£849

Accessories

Document Feeders
- Auto Document Feeder – IX-4015 £249
- Auto Document Feeder – ArcScan £259
- Auto Document Feeder – ScanJet IIcx £365
- Transparency Adaptor – ScanJet IIcx £499

SCSI Interfaces
- 8-bit SCSI interface (A3000/A3020) £119
- 16-bit SCSI Interface (A300/A400) £119
- 32-bit SCSI-2 Interface (A300/A400) £165
- SCSI-2 Interface Cable £20

Software
- Spacetech Photodesk software £159
- Sleuth OCR software £40

Scan256 Hand Scanner
Scan256 is a hand-held scanner giving you up to 256 grey scales at a maximum resolution of 400 dpi, and is supported by state-of-the-art software.

- 400mm scanning width
- 256 grey scales at up to 400 dpi resolution
- Highly advanced image processing tools
- Convoluting digital filters – over 100 choices
- True brightness & contrast control
- Save image in industry standard formats
- Selectable 256 grey/monochrome modes
- Ability to shear and/or rotate images

- **Scan256 handscanner – A300/A400 £115**
- **Scan256 handscanner – A3000 ext. £125**

Archimedes A4 Scanner
The Archi A4 scanner is a low cost 64 grey scale scanner with a scan width of up to A4 size. With a maximum resolution of 400 dpi. It is the ideal solution for scanning larger line art drawings. The scanner can be used as either a hand-held device or with an optional sheet feeder.

- **Archi A4 Scanner – A300/A400 £175**
- **Archi A4 Scanner – A3000 external £195**
- **Sheet Feeder for A4 Scanner £59**

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or FAX YOUR ORDER on 01582 488588

Hard Drives, Memory, Networking & Add-Ons

Hard Drive Upgrades

IDE Hard Drive Upgrades for A300/A400
Complete with drive, interface, mountng brackets, cables and software.

• ADA2010	280Mb	13ms	£199
• ADA0580	365Mb	13ms	£229
• ADA2030	420Mb	12ms	£269
• ADA2210	528Mb	11ms	£329

IDE Hard Drive Upgrades for A5000
For use as a replacement of existing drive.

• ADA2050	280Mb	13ms	£159
• ADA0880	365Mb	13ms	£189
• ADA2060	420Mb	12ms	£219
• ADA2220	528Mb	11ms	£279
• A5000 2nd Drive Kit			£10

A3000/A3010 Internal IDE Hard Drives

• ADA0730	120Mb	19ms	£199
• ADA2360	170Mb	13ms	£219
• ADA1070	250Mb	11ms	£249
• ADA2080	340Mb	11ms	£269
• ADA2380	405Mb	11ms	£399
• ADA2200	540Mb	10ms	£489

A300/A400 IDE Hard Cards
Hard drive mounted on interface, complete with formatting software.

• ADA0680	120Mb	19ms	£209
• ADA2370	170Mb	13ms	£229
• ADA1090	250Mb	11ms	£259
• ADA2090	340Mb	11ms	£319
• ADA2390	405Mb	11ms	£409
• ADA2230	540Mb	10ms	£499

SCSI Hard Drive Upgrade for A300/A400
Complete with 16-bit interface, drive, cables and mountng brackets.

• ADA2300	365Mb	12ms	£349
• ADA2310	528Mb	11ms	£429
• ADA2320	1.0Gb	9ms	£579
• ADA2330	2.0Gb	10ms	£1069

Interfaces & Accessories
- 16-bit IDE Interface - A300/A400 £39
- 8-bit IDE Interface - A3000/A3010 £49
- SCSI Interface - A300/A400 £119
- SCSI-2 Interface - A300/A400 £179
- 25way-50way SCSI round cable £15
- 50way-50way SCSI round cable £15
- 50way-50way SCSI-2 round cable £20
- 50way-50way SCSI ribbon cable £8

Memory Upgrades

Model	2Mb	4Mb	8Mb
• A3000	£49	£119	£269
• A3010	£59	£139	-
• A3020/A4000	-	£89	-
• A410/1	£40	£120	-
• A420/1	-	£80	-
• A5000	-	£79	£269
• A540/R260	-	£249	-

RiscPC Additional RAM Modules

• 2Mb	£79	• 4Mb	£119
• 8Mb	£279	• 16Mb	£399
• 32Mb	£poa	• 64Mb	£poa
• 1Mb VRAM	£99	• 2Mb VRAM	£159

RISC OS Upgrades

- RISC OS 3.1 Single User Upgrade £73
- RISC OS 3.1 Hardware Kit £21
- RISC OS 3.1 Bulk Software Pack £319

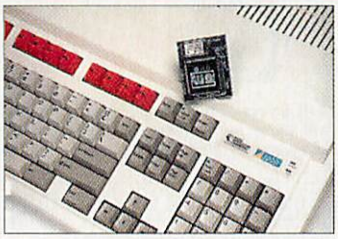
Fax/Modem Bundle

US Robotics Sportstar 14.4 Fax/Modem with ArcFax software enables you to use your Archimedes to send and receive faxes.
- Sportstar/ArcFax Bundle £149

Graphics Cards

- Colour Card Gold £239
- Chroma 500 Genlock Card £419
- Chroma 150 PAL Encoder £169
- Chroma Genlock Card £209
- Hawk V9 MKII Digitiser £189
- Eagle M2 Multimedia Card £319
- Vision24 254-line Colour Digitiser £99
- Vision24 508-line Colour Digitiser £139
- CC TV Tuner Card £89
- CC TV Tuner Card & Teletext £159
- CC Movie Magic MPEG Card £249
- Scanlight Video 256 £199
- Multiscan VIDC Enhancer £15
- SuperVGA VIDC Enhancer £29

25MHz ARM3 Turbo Card



Using the latest surface mount technology on a high quality 4 layer PCB, the ARM3 Turbo Card will increase the speed of your A300, A400 or A3000 computer by up to 6 times.

The upgrade can be fitted by the user in A300 and A400 machines, but for owners of the A3000 we can collect, fit and deliver your computer back for an additional £35.

Owners of A300 and old A440 models will require a MEMC1A upgrade to use the ARM3.

Buy ARM3 Turbo Card and RISC OS 3.1 Upgrade for only £159

Special Offer Price £99

Ultimate Expansion

Need an internal hard disk drive and a user port on your A3000 or A3010, then look no further. The Ultimate Expansion System from HCCS is an internal podule with a user port as standard. Space is provided for a 2.5" IDE hard disk drive and three micro-podule slots are also provided for future expansion.

- Ultimate Expansion Interface £39
- Ultimate Expansion Interface & IDE £99
- Ultimate Expansion with 120Mb drive £229
- Ultimate Expansion with 170Mb drive £259
- Ultimate Expansion with 250Mb drive £299

Micro-Podule for Ultimate Expansion
- SCSI Interface £69
- Vision Colour Digitiser £69
- ScanLight 256 £229
- MIDI Interface £49
- Analogue Interface £29

I/O Expansion Cards

- A3000 User Port/Analogue Card £35
- A3000 User Port/MIDI Card £44
- I/O Podule - User/Analogue/1MHz £79
- A300/A400 User/Analogue Card £49

Miscellaneous Add-ons

- 4way Backplane - A300 series £22
- Archimedes Fan £8
- A3000 Serial Port Upgrade (AKA18) £19
- Arc to BBC Serial Link £15
- MEMC1A Upgrade £25
- Floating Point Accelerator - A5000 £99
- ArcLaser A4 1200dpi Laser Printer £985
- ScanLight 256 - A3000 Internal £199

2010 Concept Keyboard

- A4 Universal 2010 Concept Keyboard £99
- A3 Universal 2010 Concept Keyboard £109
- 2010 BBC User Port Cable £12
- 2010 Archimedes Serial Port Cable £12
- Concept Keyboard Designer software £20

Accessories

Dustcovers & Carry Cases
- A3000 Keyboard cover £5
- A3000 Keyboard & Monitor cover £9
- A300/A400 Micro & Monitor cover £9
- A5000 Micro & Monitor cover £9
- 14" Monitor cover £6
- A3000/A3010 Carry Case £10
- A4 Notebook Carry Case £35

Mice & Joysticks
- Archimedes Mk4 Mouse £24
- Acorn Logitech Mouse £29
- Voltmace Delta Cat Joystick £25
- Quest Tracerball £20
- Power Pad Single Joypad £25
- Power Pad Dual Joypad £34

Miscellaneous Accessories
- A4 Notebook Battery Pack £49
- A3000 Monitor Stand (WE) £15
- A3000 Monitor Stand (Acorn) £25
- A3000 External Podule Case £10
- Archimedes Keyboard Extension Cable £5
- Archimedes Mouse Port Splitter £5

Educational Discounts
are available on most products to Schools, Colleges & Universities. Call for details.

Networking Products

Acorn Econet Products
- Econet Interface - A300/A400/A5000 £42
- Econet Interface - A3020/A4000 £49
- Econet Interface - RiscPC £49
- Econet Interface - A4 Notebook £49
- Econet Starter Kit £135
- Econet Bridge £239
- Econet Socket Kit (5pk) £25
- 100m Econet Cable £99
- Econet Station Lead (1.2m) £4

Acorn Ethernet Products
- Ethernet Interface III - A5000 £149
- Ethernet Interface - RiscPC £99

Acorn Access Peer to Peer Networking
- Acorn Access - A3000 £145
- Acorn Access - A3020/A4000 £145
- Acorn Access - A5000 £145
- Acorn Access - RiscPC £119

I-Cubed Ethernet Products
- EtherLan 102 - A3000/A3010 £129
- EtherLan 202 - A3020/A4000 £136
- EtherLan 502 - A300/A400/A5000 £129
- EtherLan 602 - RiscPC 600 £109

I-Cubed AccessFlash Network
- AccordFlash 100 - A3000/A3010 £149
- AccordFlash 200 - A3020/A4000 £159
- AccordFlash 500 - A300/A400/A5000 £149
- AccordFlash 600 - RiscPC 600 £139

Ethernet Hubs
- Aries EH-8 8 port Ethernet Hub £179
- Aries EH-12 12 port Ethernet Hub £259
- Aries EH-16 16 port Ethernet Hub £329

Ethernet Cabling

Cable length	Thinnet	UTP
• 3m	£5	£3
• 5m	£6	£5
• 10m	£9	£8
• 15m	£12	£10
• 20m	£17	£14

Ethernet Accessories
- BNC Terminators £1.25
- BNC In-line coupler £1.55
- BNC T-connector £2.00

Networking Software/Documentation
- AUN/Level 4 Fileserver Rel.3 £359
- TCP/IP Protocol Suite - single user £99
- TCP/IP Protocol Suite - site licence £399
- Level 4 Manager's Guide £19
- AUN Manager's Guide £19

PC Cards

Transform your Archimedes so you can run standard PC DOS or Windows based software with the Aleph One range of PC cards. Two models are available - 486SLC25 for general purpose applications or a 486SLC2-50 for greater performance.

Both versions come with interface connectors for a local IDE hard disk, a parallel printer port, serial port and there is also a socket provided for an optional maths co-processor. A single SIMM socket is provided and will accept RAM up to a maximum of 16Mb.

- 486 SLC25 PC Card - no RAM £349
- 486 SLC25 PC Card - 4Mb RAM £469
- 486 SLC2-50 PC Card - no RAM £429
- 486 SLC2-50 PC Card - 4Mb RAM £549
- 8Mb SIMM RAM for above £259
- 16Mb SIMM RAM for above £399
- 486SX33 PC Card - RiscPC 600 £199
- MS-DOS 6.2 & Windows 3.1 £89

Archimedes Spares

- A300/A400/A5000 Cased Keyboard £99
- A3000/A3010/A3020 Keyboard £29
- A4000 Cased Keyboard £79
- Arc Mk2 Keyboard Controller PCB £49
- A300/A400 Power Supply £59
- A3000 Power Supply £35
- A4000 Power Supply £59
- A5000 Power Supply £69
- 3.5" Floppy Drive - A3000/A400 £29
- 3.5" Floppy Drive - A4000/A5000 £35
- VIDC (VL86C310) £39
- MEMC1A (VL86C110) £29
- ARM2 8MHz CPU (VL86C010) £20
- IOC (VL86C410) £39
- 256K x 4 120ns ZIP DRAM £6
- Replacement Keyboard Cable £17
- Replacement Mouse Cable £12
- Replacement Mouse Ball £7
- 1.2v NiCad Battery - A3000/A5000 £4
- AA Batteries - A300/A400 £2
- Fan Filter & Clamp £6
- Loudspeaker £3
- A3010/A3020 FDD Eject Button £2

BBC Products

- AMX Super Art (ROM/Disc) £10
- AMX Stop Press (ROM/Disc) £10
- AMX Page Fonts for Stop Press £5
- AMX Mouse & FREE mouse mat £15
- Quest Paint software (ROM/Disc) £15
- ConQuest ROM £12
- Quest Fonts Disc £5
- Quest Integrex 132 printer driver £5
- Quest Tracerball - BBC B/M128 £20
- Quest Mouse Mat £3
- InterWord ROM £36
- InterSheet ROM £36
- InterChart ROM £25
- Logotron Logo ROM £40
- Mega3 ROM - Word/Sheet/Chart £69
- Numerator ROM £39
- Pendown ROM £32
- SpellMaster ROM £40
- Wapping Editor £29
- Wapping Art Disc £10
- Wapping Font Disc 1 £10
- Wapping Font Disc 2 £10
- View Printer Driver ROM £15
- View 3.0 ROM £45
- ViewSheet ROM £36
- ViewStore ROM £36
- ViewSpell ROM £28
- View Printer Driver Generator Disk £10
- Master 512 Co-processor £49
- Master 65C 102 Co-processor £39
- Solderless ROM Board £25
- 32K ROM/RAM Card - BBC B £29
- 64K ROM/RAM Card - BBC B £39
- 128K ROM/RAM Card - BBC B £59
- 32K Shadow RAM Card - BBC B £29
- 16K Static RAM for ROM/RAM Card £8
- 16K DRAM upgrade for ROM/RAM £7
- Battery backup for ROM/RAM Card £3
- Sideways RAM Utilities Disc £5
- Twin ROM Cartridge for Master 128 £6
- Quad ROM Cartridge for Master 128 £12
- Data Duck £10
- Power Duck £5
- Acorn 1772 DFS Kit - BBC B £47
- Acorn ADFS ROM Upgrade £25
- Acorn DNFS 1.20 ROM £10
- Watford 1772 DDFS Kit - BBC B £29
- BBC BASIC 2 ROM £15
- Watford DFS 1.44 ROM £10
- Watford Diagnostic Disc - BBC B £10

BBC Spares

BBC B Spares
- BBC B Power Supply £49
- BBC Keyboard £35
- Keyswitches £1
- Function Keystrip Holder £3
- Serial/Video ULAs £10
- 6502A CPU £5
- 6522A VIA £5
- 6845 CRTC £10
- 6850 ACIA £8

Master 128 Spares
- Master 128 Keyboard £62
- Master 128 Battery Pack £4
- Master 128 Power Supply £69
- Master ULAs £15
- 1772 Disc Controller £10
- 6818 Real Time Clock £12
- Loudspeaker £3
- 65SC12 CPU £12

Please note that due to the lack of brand new spare parts for the BBC some of the above items may be reconditioned

TO ORDER CALL OUR SALES HOTLINE 01582 745555
or FAX YOUR ORDER on 01582 488588

Access VISA AMERICAN EXPRESS

Printers & Accessories

Laser Printers

All Laser printers (excluding Hewlett Packard & Panasonic 4400/4401/5400) include 12 Months On-Site maintenance

Brother HL630	6ppm	£356
Brother HL-6V	6ppm	£456
Canon LBP 4i	4ppm	£427
Canon LBP-8 IV	8ppm	£920
Canon LBP-8 IIIR	8ppm	£1559
Epson EPL-3000	4ppm	£389
Epson EPL-5200	6ppm	£462
Epson EPL-5600	6ppm	£596
Epson EPL-7500 PS	6ppm	£1135
Fujitsu VM600	6ppm	£499
HP Laserjet 4L	4ppm	£387
HP Laserjet 4 ML	4ppm	£735
HP Laserjet 4P	4ppm	£595
HP Laserjet 4MP	4ppm	£850
HP Laserjet 4MV	4ppm	£1989
HP Laserjet 4V	4ppm	£1374
HP Laserjet 4+	12ppm	£940
HP Laserjet 4M+	12ppm	£1260
HP Laserjet 4Si	16ppm	£2095
HP Laserjet 4Si MX	16ppm	£2967
NEC SuperScript 610	6ppm	£268
NEC SuperScript 610+	6ppm	£283
NEC SuperScript 660	6ppm	£416
NEC SuperScript 660i	6ppm	£569
NEC SuperScript Colour 3000	6ppm	£677
OKI OL-400ex	4ppm	£319
OKI OL-410ex	4ppm	£259
OKI OL- 850 PS	8ppm	£1199
Panasonic KX-P4400P	4ppm	£279
Panasonic KX-P4401P	4ppm	£330
Panasonic KX-P4410*	5ppm	£318
Panasonic KX-P4430*	5ppm	£479
Panasonic KX-P4440*	10ppm	£749
Panasonic KX-P5400	4ppm	£595
Star WinType 4000	4ppm	£296

*2 years on-site warranty

Laser RAM Upgrades

Type	1M	2M	4M	8M
Canon LBP-4+	£139	–	–	–
Canon LBP-4i	£109	–	£279	–
Canon LBP-8 IV	£119	–	£299	–
EPL-4100/4300	£70	£110	£205	–
EPL-5200/5800	£58	£115	£215	–
Fujitsu VM600/VM4	£57	£85	£149	£299
Fujitsu VM800	£115	–	–	–
HP III/IIIP/IIID	£75	£115	£135	–
HP II/IID	£75	£115	£135	–
HP IIISI	£57	£85	£158	£299
HP 4/4M/4P/4MP	£85	£85	£149	£299
HP 4L/4ML	£75	–	–	–
KX-P4410/4430	£129	£199	–	–
KX-P4420/4450i	£75	£115	£135	–
KX-P4400/5400	£89	£139	£229	–
OKI OL400e	£99	£118	–	–
Star LP-8	£138	£225	–	–
Star LS-5	£75	–	–	–

Laser Consumables

Type	Toner	Drum	Dev
Brother HL630	£20	£99	–
Canon/Star 4s	£46	–	–
Canon LBP-8 IV	£70	–	–
Canon LBP-8 III	£52	–	–
EPL-4100/4300	£75	£89	–
EPL-5200	£85	–	–
EPL-7100/7500/8100	£117	–	–
Fujitsu VM600	£85	–	–
Fujitsu VM800	£115	–	–
Fujitsu VM4	£29	£149	£89
HP II/III/IIID	£47	–	–
HP IIP/IIIP	£46	–	–
HP IIISi/4Si	£85	–	–
HP 4/4M/4P/4MP	£72	–	–
HP 4L/4ML	£49	–	–
NEC 610	£85	–	–
NEC S80/S62P	£105	–	–
OKI OL-400/800	£19	£189	–
OKI OL-400e	£17	£129	–
KX-P4410/30	£29	£80	£90
KX-P4440	£32	£108	£115
KX-P4420	£24	£60	£55
KX-P4450/50i/51/55	£18	£75	£60
KX-P4400/5400	£32	£69	–
Qume Crystalprint	£99	£189	–
Star LS-5	£83	–	–

Laser Accessories

JetPage Postscript Cartridge - IIP/IIIP	£225
Postscript Upgrade for Laserjet 4	£270
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lower Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for LaserJet 4	£199
LaserJet Font Cartridges	from £45
LaserJet III FX/IBM Emulation Cart.	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for LaserJet 4P	£85
Postscript Upgrade for LaserJet 4P	£225

9pin Matrix Printers

Citizen Swift 90	80col	£114
Citizen Swift 90C	80col	£121
Citizen 1200+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£105
Epson LX100	80col	£109
Epson LX300	80col	£89
Epson LX400	80col	£89
Epson LX1050	132col	£172
Epson FX870	80col	£222
Epson FX1170	132col	£280
Epson DFX5000+	132col	£1095
Panasonic KX-P1150	80col	£89
Panasonic KX-P1695	132col	£267
Star LC15	132col	£177
Star LC100C	80col	£89
Star LC90	80col	£89
Star ZA200	80col	£255
Star ZA250	132col	£315

24pin Matrix Printers

Citizen ABC Mono	80col	£106
Citizen ABC Colour	80col	£125
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 240 Mono	80col	£160
Citizen Swift 240 Colour	80col	£178
Citizen Swift 24X	132col	£235
Epson LQ100	80col	£97
Epson LQ150 Mono	80col	£114
Epson LQ150 Colour	80col	£152
Epson LQ570+	80col	£185
Epson LQ870	80col	£350
Epson LQ1070	132col	£282
Epson LQ1170+	132col	£400
Epson DLQ3000		£672
Epson LQ3000	132col	£680
NEC P2Q	80col	£98
NEC P3Q	132col	£236
NEC P62Q	80col	£315
NEC P72	132col	£375
NEC P90	132col	£549
Panasonic KX-P2023	80col	£108
Panasonic KX-P2124	80col	£200
Panasonic KX-P1624	132col	£210
Panasonic KX-P2135	80col	£124
Panasonic KX-P3626	132col	£262
Star LC24-20 II	80col	£113
Star LC24-15 II	132col	£232
Star LC24-300C	80col	£146
Star LC90	80col	£79
Star LC240 Mono	80col	£92
Star LC240 Colour	80col	£105
Star XB24-200C	80col	£315
Star XB24-250C	132col	£385

Ribbons/Ink Cartridges

(Manufacturers Original Ribbons Only)

Type	Black	Colour
Canon BJ10ex/BJ10sx	£14	–
Canon BJ200/BJ230	£16	–
Canon BJ300/BJ330	£11	–
Canon BJC600	£6	£7
Canon BJC800	£16	£22
Canon BJC4000	£7	£13
Citizen 120D+	£4	–
Citizen Swift 200/240	£4	£13
Citizen Swift 24X	£8	£18
Epson LX400/LX850/FX870	£4	–
Epson LX100	£4	–
Epson LX1050/FX1170	£5	–
Epson LQ100	£4	–
Epson LQ150	£4	£12
Epson LQ570/870	£5	–
Epson LQ1070/1170	£8	–
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£21	–
Epson Stylus Colour	–	£29
Epson Stylus 300	£12	–
Epson Stylus 800/1000	£10	–
Fujitsu DL1150/DL1250	£5	£7
Fujitsu DL3600	£6	£12
Fujitsu B100/B200	£14	–
HP DeskJet Std Capacity	–	£21
HP DeskJet High Capacity	£20	–
HP DeskJet 310	£15	£21
HP DeskJet 1200	£20	£21
HP PaintJet	£16	£18
HP PaintJet XL300	£16	£18
Kaga/Taxan KP810/815	£5	–
NEC P88Q/P32Q	£8	–
NEC P82/72/90	£8	£14
Panasonic 1150/1170/1180	£7	–
Panasonic 2180/23/24/35	£7	£14
Panasonic 1824/2824	£8	–
Star LC10/LC20/LC100	£5	£9
Star LC100/200	£5	£11
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	–
Star SJ144 Thermal	£18	£18

Inkjet Printers

Canon BJ10sx	80col	£136
Canon BJ200	80col	£178
Canon BJ230	132col	£236
Canon BJ300	80col	£318
Canon BJ330	132col	£368
Canon BJC600	80col	£328
Canon BJC800	132col	£1067
Canon BJC820 (Mac)	132col	£1228
Canon BJ4000 Colour		£329
Citizen ProJet IIC		£191
Citizen Notebook 2		£191
Epson Stylus 300	80col	£138
Epson Stylus 400	80col	£132
Epson Stylus 729 Colour	80col	£327
Epson Stylus 800+	80col	£169
Epson Stylus 1000	132col	£312
Epson Stylus Colour	80col	£333
Epson SQ870	80col	£415
Epson SQ1170	132col	£580
Fujitsu B100	80col	£145
HP DeskJet 320		£169
HP DeskJet 320 & CSF		£202
HP DeskJet 520	80col	£195
HP DeskJet 500C	80col	£199
HP DeskJet 560C	80col	£329
HP DeskJet 1200C	80col	£907
HP DeskJet 1200C PS	80col	£1266
HP PaintJet XL300+	132col	£1599
HP PaintJet XL300 PS	132col	£2568
HP DeskWriter 520 (Mac)	80col	£199
HP DeskWriter 500C (Mac)	80col	£260
HP DeskWriter 560C (Mac)	80col	£375
Star SJ48	80col	£182
Star SJ144	80col	£285
Star Wintype 800C Thermal Colour		£592
Star Wintype 4000		£297

Sheet Feeders

Canon BJ10ex/BJ10sx	£40
Canon BJ300	£88
Canon BJ330	£92
Citizen Swift 24/200/240	£75
Epson LX400	£69
Epson LQ570/LQ870	£47
Epson LQ1070/LQ1170	£89
HP DeskJet 310	£48
NEC P20/P220	£59
NEC P3Q/P32Q	£85
Panasonic 1170/1180/1123	£59
Panasonic 1124/1124i/2124	£79
Panasonic 1824/2824	£128
Panasonic KX-P2135	£30
Star LC100	£69
Star LC24-20	£69
Star LC200/LC24-200	£69

INKJET REFILL PACKS

Canon BJ10ex/BJ10sx - 2 pack	£12
Canon BJ10ex/BJ10sx - 5 pack	£24
Canon BJ10ex - Cart/3 Refills	£29
Canon BJ200 - Cart/3 Refills	£34
HP DeskJet Std Capacity - 2 pack	£8
HP DeskJet Hi-Capacity - 2 pack	£24
HP DeskJet Std Capacity - 5 pack	£14
HP DeskJet Hi-Capacity - 5 pack	£35
HP DeskJet Colour - Cart/4 Refills	£49

Accessories

Citizen Swift 200/240/ABC Colour Kit	£32
Citizen Projet II Cartridge	£3
Canon BJ10sx Battery Pack	£32
Epson 0K Serial Interface	£29
Epson 8K Serial Interface	£75
Epson 32K Serial Interface	£95
Epson LQ100 Tractor Unit	£29
HP DeskJet FX Emulation Cartridge	£49
HP DeskJet IBM Emulation Cartridge	£57
HP DeskJet 256K RAM Cartridge	£45
HP Deskjet 310 Black Cartridge	£14
HP DeskJet 310 Battery Pack	£33
HP DeskJet Carry Case	£49
HP DeskJet 310 Colour Kit	£28
HP DeskJet 1200 Postscript Upgrade	£499
HP DeskJet Prestige Elite Fonts	£55
HP DeskJet Letter Gothic Fonts	£56
HP DeskJet 310 Parallel Cable	£12
Panasonic Serial Interface	£49
Panasonic 32K Buffer	£16
Panasonic 2180/2123 Colour Kit	£30
Star 8K Serial Interface - LC range	£52
Star 8K Serial Interface - XB range	£39
Star 32K Buffer - LC24/XB24	£52
Dustcovers for 80col printers	£6
Dustcovers for 132col printers	£9
51636G - 50 x DJ500 Transparencies	£35
51838J - 50 x DJ500 Glossy A4 Paper	£35
51630Z - 50 x DJ500 A4 Paper	£15
Appletalk Printer Cable - 2m	£12
Appletalk Interface for DeskJet 1200	£129
Appletalk Interface for LaserJet III	£189

HP On-site Warranty 3yrs

Mono DeskJets & Deskwriters	£40
Colour DeskJets & Deskwriters	£85
4ppm LaserJets & DeskJet 1200C	£100
8ppm LaserJets	£185

LUTON SHOWROOM
1 Finway, Dallow Road, Luton, Beds.
Tel: 01582 74 55 55

WATFORD SHOWROOM
250 Lower High Street, Watford, Herts.
Tel: 01923 23 77 74

Manual Printer Sharers

Standard Low Cost Sharers

Connects	Serial	Parallel
2 to 1	£8	£9
3 to 1	£11	£12
4 to 1	£15	£16
5 to 1	£27	£28

Professional Sharers

Connects	Serial	Parallel
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Dave Lawrence and Dave Acton present more programs, tips and techie trivia from beyond the PRM.

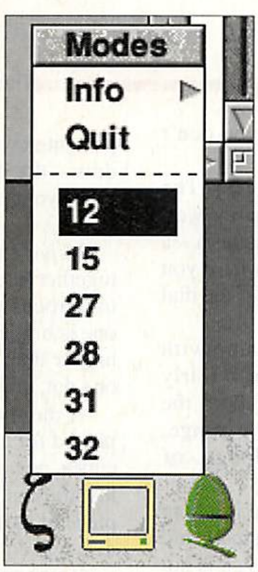
Old Modes

Author: Matt Lewis

Matt Lewis, apparently of Weird Sheep Software, is the force behind this elegant utility that bridges the gap between the old and new methods of selecting screen modes.

As Risc PC owners will know, you now get a mode selection window which gives you a range of colours and resolutions to choose from. Modes are now defined as descriptor blocks rather than single numbers. Some older programs, however, require old-style modes and although these can be typed in from the Display Manager's Mode box, Matt and his sheep of doubtful normality have come up with a more elegant solution.

OldModes installs a module *OldModes* which contains the patch. This uses our favourite trick – the mighty filter – to add an extra menu to the Display Manager icon. Thus, clicking on the said icon with Adjust produces a menu containing all your old favourites. (Who could forget the eternal charm of 12? Relive the splendour that is 28 and be enticed by the majesty of 31...)



Being a module, the utility takes up just a little more than 1K, plus some for templates – handy if you've got a lot of patches since they all add up. We also thought it was quite a while since we did an In Detail spot, so you'll find the source for Matt's module inside *OldModes* and an explanation below:

Old Modes in detail

Matt's module is a good example in many respects. A module using filters is the neatest and most legal way to customise the desktop and as an added bonus, Matt's source is very clearly written, so it is recommended as a starting point for any readers doing their own patches. Here are a few details about how the main sections of the program work:

Lines 290-390: The standard module header.

Line 680: The initialisation code starts here. This begins by grabbing 512 bytes of workspace from the RMA, then it tries to find the Display Manager task number. Since we only know the name of the task and need to find its number so we can apply a filter to it, we must go through the list of tasks using Task Manager_Enumerate Tasks until we find a name that matches.

Line 1100: Having got the task number, a post filter is applied; look at October 94's *INFO for more details about how this is done. The filter will be called just before the WIMP returns control to the Display Manager task, which gives the module a chance to spot a click with Adjust.

Line 1150-1160: Clear a flag to say that the templates aren't loaded. The patch uses its own templates file (which in fact just contains an Info window). The reason templates aren't loaded when the module initialises is that the module isn't a task in itself – merely a patch into another task. Therefore, the template file must be loaded while the host task is paged in, so a flag is used – this is done the first time the patch is called.

Lines 1300-1500: The finalisation code. This de-registers the filter (if it was ever registered successfully) and frees claimed memory, including any used for the templates.

Line 1650: The filter itself.

Lines 1670-1770: Checks the template flag. If clear, it is set and the template file loaded. The Info window is also attached to the menu.

Lines 1790-1910: Checks if the icon bar was clicked with Adjust. If not, the filter allows the WIMP block to be passed back intact to the Display Manager – otherwise our own menu is opened and a flag is set to note the fact.

Lines 1930-2050: Menu selections are dealt with here. If the ourmenu flag is clear, we don't interfere since this will be a selection on the 'real' Display Manager menu. Otherwise, Wimp_SetMode is called to change the mode to the appropriate number, read from modestable.

Lines 2070-2160: If the Display Manager task is shut down, our filter must be removed.

Line 2200: Here R0 is changed to -1 so the host task will do nothing and the original Wimp_Poll reason code is discarded.

Lines 2250-2350: The menu, defined using the macro FNmenuitem.

Lines 2370-2430: The mode table – note the numbers should correspond to those in the preceding menu.

Line 3070: The routine to create our own menu is assembled in FNiconbarmenu. The mouse position is read and the menu opened with Wimp_CreateMenu in the usual way at the correct position. Note that the routine intelligently works out the height of the menu, so if you add or delete a mode number it will still appear at the official y co-ordinate.

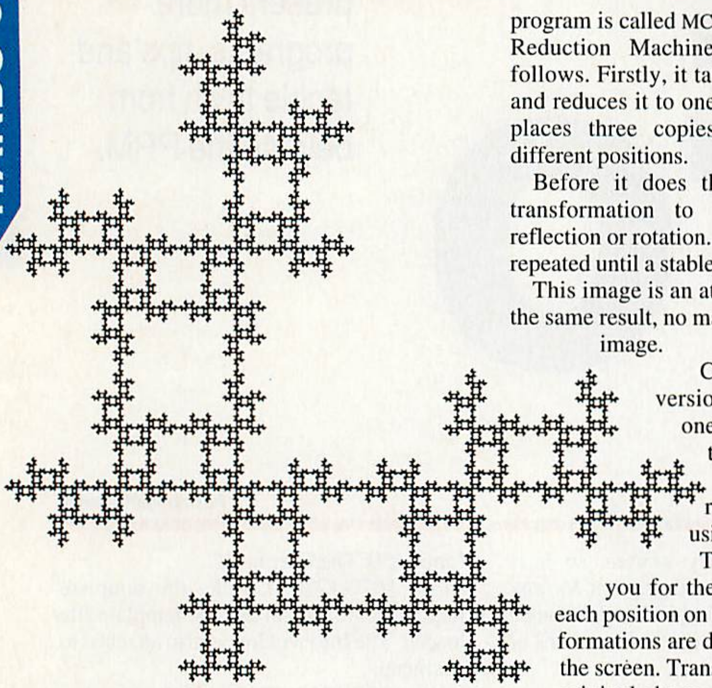
Line 3360: FNloadtemplates assembles a routine to load a template file. Memory is grabbed from the RMA, the file is opened, the template for the Info window is loaded, the window is created and the template file closed again.

Line 3820: Release any workspace grabbed for the templates.

HANDS ON

Copy copy copy copy copy copy copy

Author: Chris Bradburne



Chris Bradburne of Orpington has sent us another interesting fractal exploration program. It produces black and white images akin to the Serpinsky Gasket which we all know and, er, know. In fact, it can actually produce that infamous image. The program is called MCRM or Multiple Copy Reduction Machine and it works as follows. Firstly, it takes the whole screen and reduces it to one quarter size. It then places three copies on the screen at different positions.

Before it does this it may apply a transformation to the copy such as reflection or rotation. The whole process is repeated until a stable image is achieved.

This image is an attractor and produces the same result, no matter what the starting image.

Chris has supplied two versions of the program; one for multiscan monitors using mode 21 and one for low-resolution monitors using mode 13.

The program will ask you for the transformations for each position on the screen – the transformations are displayed at the top of the screen. Transformation zero is the original shape which is represented by an L.

Transformations one to three are rotations of zero and transformations four to seven are reflections of zero. Any combination can be used, although different combinations may produce the same result. After all three have been entered, the program asks you if you would like an equilateral or rightangled triangle to display. The program then draws the appropriate image. To exit the program press Escape at any time, or Q at the end of the display routine.

The following are interesting points:

- There are 232 different rightangled images.
- Of these, 224 are non-symmetric and can be produced with two sets of transformations e.g. zero, one, five and four, three, two.
- The remaining eight are symmetric attractors and can be produced with eight different sets of transformations.
- The Serpinsky Gasket is obtained with zero, zero, zero.
- The images fall into three categories: simply connected (e.g. zero, two, one); connected (zero, four, seven); totally disconnected (three, one, six).

All the images are attractors and consequently, any start pattern will produce the same result. If you do not believe me, alter the lines around 2600 in either program. Even PRINTTAB(10,10) "MCRM" produces the same shape. The only restriction is that the colour must be bright white (colour 64 tint 255).

For further information see *Chaos and Fractals, New Frontiers of Science* by Peitgen, Jürgens and Saupe.

Doubly stereo

Author: Peter Bagnall

Just when we thought we'd covered every possible 3D, stereoscopic, dotty, coloured, stripey, eye-straining display method, Peter Bagnall of Scunthorpe sends us another. Apparently, Peter is one of the few sane people left in world who still can't see those 'Magic Eye' pictures.

These are actually part of a world domination plan invented by aliens from Mercury. Sooner or later the patterns will say 'Surrender' and the Mercurians will descend among us and make us watch *Beadle's About* until we devolve into Apes. Ingenious indeed.

For some reason, Peter didn't want to miss out on this fiendish plan, so he wrote his own stereo image generator *BinImage*. It works like this: 'Normally, when you look at an object in the real world each eye sees it from a different angle.

'To emulate this I wrote a program to draw a 3D cube, and altered the coordinates of the cube relative to each eye before drawing. Each eye then sees the cube from a different angle, just as in reality. This is how virtuality emulates 3D. The brain (I reckon) should lock on to this faster, because the colour/shape of the object is much more clearly defined, so you don't get a headache trying to find it.

'However, this is not quite ideal. The brain uses focusing information as well when range finding. Imagine a camera – a good one, with manual focus – where you focus on an object and can read off the dial the distance of that object.

'Well the brain can do the same with the eyes. This only works over a fairly limited range, but then again so does the stereo-image method. For long range, the brain just uses knowledge of objects.

'For example, "I know that tree is a long way away, because it looks very small, and trees are quite big". Unfortunately, it is not possible to fool the focusing of the eye properly, so all these emulations are rather poor.

'A hologram does fool the focussing, which is why holograms are so convincing, as well as the fact that you don't have to be touching it with your nose to get the two separate images.'

Using BinImage

'When you run the program you will be presented with a short vertical line and two dots – the dots are moved by the mouse. Place your eyes about four inches from the screen.

'Move the mouse until the dots move together into one single dot – you will have to defocus your eyes to get it to work. If one is higher than the other then one eye is higher than the other. When they become one dot, press a mouse button.

'A moving image of a cube will be displayed for a while. There will be two other cubes, one either side; if these are distracting they can be eliminated by placing a piece of card between your eyes, or even a disc will do.

'If you see two overlapping cubes, move your head very slightly backwards and forwards until they become one again. The sprite backdrop is there to help the brain determine where infinity is (photographers know what I mean).

'If you can borrow a pair of glasses from someone who is long sighted they will help to make the illusion easier to see. Be warned however, doing this for any length of time may cause significant eye strain, so don't watch it for too long.'

Go on, have a go

Author: Andy Pillidge

The ancient oriental game of Go has not received the attention it deserves from the computer world. Go is the oldest of all games – invented some 4000 years ago in China – and this little program from Andy Pillidge will allow you and a fellow human to try your hand at what is arguably the hardest game in the world.

Andy says: 'I wrote the program to enable me to tinker with strategy and tactics, but unfortunately a program that actually plays Go would be way beyond my programming skills.

'Indeed, though many programs exist that play Chess to a very high standard, I believe that Go programs are very weak, since the game is too intuitive to be readily computerised.

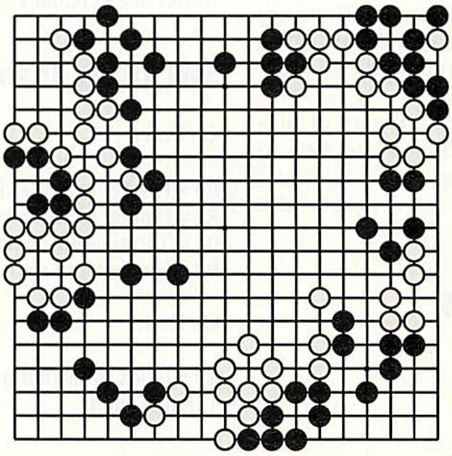
'The rules of Go are simple. Stones are placed alternately on the intersections of a 19 x19 grid, with the objective of surrounding as much territory as possible. Black always plays first.

'Any stone or group of stones completely surrounded by stones of the opposing colour are captured and removed from the board as prisoners. The captured stones and surrounded territory are counted up at the end of the game, which is when both players agree that no more territorial gains can be made.

'The rule of Ko is implemented in the program and states that if a single stone is captured, the other player may not immediately recapture on the same point, but must play somewhere else first. This rule prevents repeated captures on the same point, which would lead to stalemate.

'My program works in a recursive fashion to test whether a group of stones has been captured. The system is not completely foolproof, but it requires a very contrived group of stones to crash the capture-testing routine.

'The program allows a game to be saved, which creates a file called *GoFile*, and reloaded later. The program also allows the user to step backwards to play alternative moves.



'As well as all this, there is a facility to export the current board as a *Draw* file – for printing purposes.'

If anyone would care to try their hand at writing a thinking routine for Andy's program, we would be delighted to publish it. And since Go is an ancient game steeped in tradition, we've prepared a guide to the dos and don'ts:

Essential Go facts and etiquette

The traditional Go board (or *go ban*) is a solid wooden block and the best boards are made from the Torrey pine of California. The stones (or *go shi*) are black and white. The white ones are traditionally made from clamshells from Miyazaki Prefecture in Kyushu, south Japan, and the black are made from a special kind of stone from the Nachi cataract in Kishiu.

You should not grasp a handful of stones but draw them one at a time when they are to be played. Fortunately, Andy's program does not permit this breach of etiquette

The stone should be grasped lightly between the middle and index fingers of the right hand. This requires some practice.

When playing the computer version, we recommend that you press the mouse buttons with both these fingers in keeping with tradition. Finally, it is considered impolite to play your very first stone in the centre of the board.

Bystanders shouldn't comment on the game in progress as traditional boards still contain an indent on the reverse side to hold the severed head of anyone offering unwanted advice. As this is not available with the program, users of our computer version will have to Blu-tack any heads to the top of their monitors as best they can.

Van Mourik trio

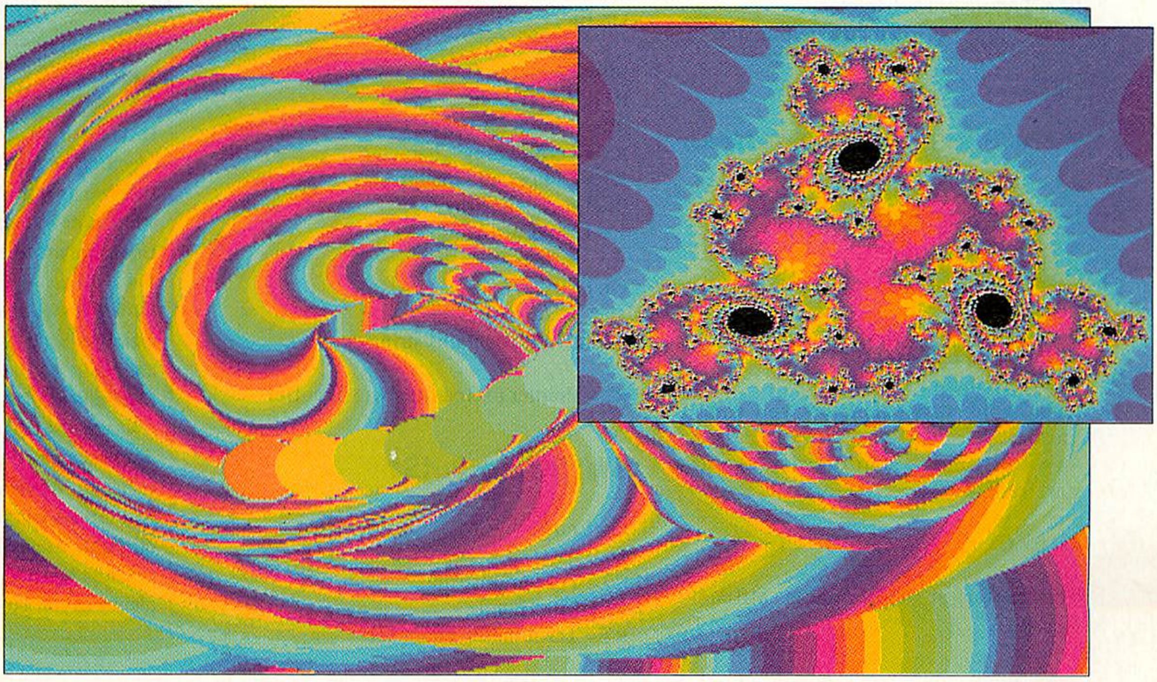
Author: Jean Van Mourik

Three ditties now from Jean Van Mourik, our regular contributor in Dyfed.

This month we start with *Flock2* which is a flocking program. The sheep, fish, birds and aardwolves wander about the wraparound world, gradually forming into flocks. The left mouse button can be used to frighten them so they go their separate ways again.

Painter is a DIY 256-colour string-thing-like painting whatchamacallit. Use the left and right buttons to control the size of your whatnot.

Finally, *TrianJulia* plots a Julia set with triangular symmetry.



Strings, labels and useless calls?

Author: Paul Burns

Paul Burns of Wigan has sent us a useful little module to ease string handling in machine code. Paul – and many others we're sure – has noticed that the string handling facilities offered by the the kernel are somewhat lacking. OS_EvaluateExpression does allow some string operators, but they are a bit awkward to use and there is no INSTR, MID$ and so on.

He therefore decided to write the *StringUtils* module to handle strings in a more BASIC way. Unlike BASIC strings though, *StringUtils* can cope with strings of any length and terminated by any character, not just CR.

The module provides a library of funtions including file operations and SWIs to change the case of strings.

The following SWIs are available with the *StringUtils* module:

SWI String_Left$

On Entry:

R0 = Pointer to string
R1 = Pointer to buffer
R2 = Terminating character
R3 = Number of characters to transfer

On Exit:

The buffer at R1 contains LEFT$($R0,R3)

SWI String_Right$

On Entry:

R0 = Pointer to string
R1 = Pointer to buffer
R2 = Terminating character
R3 = Number of characters to transfer

On Exit:

The buffer at R1 contains RIGHT$($R0,R3)

SWI String_Mid$

On Entry:

R0 = Pointer to string
R1 = Pointer to buffer
R2 = Terminating character
R3 = Number of characters you want to transfer
R4 = Character to start transfer from (i.e. start from R0+R4)

On Exit:

The buffer at R1 contains MID$($R0, R3,R4+1)

SWI String_Move$

On Entry:

R0 = Pointer to string
R1 = Pointer to buffer
R2 = Terminating character

On Exit:

Buffer at R1 contains the string at R0

SWI String_Instr

On Entry:

R0 = Pointer to first string
R1 = Pointer to second string
R2 = Terminating character
R3 = Character to start from

On Exit:

R3 = Index of second string within first (or -1 if not found)

SWI String_Len

On Entry:

R0 = Pointer to string
R1 = Terminating character

On Exit:

R1 = Length of string at R0

SWI String_Get$#

On Entry:

R0 = Pointer to Buffer
R1 = File Handle
R2 = Length Of Buffer
R3 = Terminating Character
R4 = Direction to load from
0 = Load next string
1 = Load Last string

On Exit:

Buffer at R0 contains string

R2 = Pointer to first free byte in buffer

SWI String_Put$#

On Entry:

R0 = Pointer to string
R1 = File Handle
R2 = Terminating character

On Exit:

String at R0 is written to file

SWI String_ToLowerCase

On Entry:

R0 = Pointer to string
R1 = Terminating character

On Exit:

String at R0 is in lower case

SWI String_ToUpperCase

On Entry

R0 = Pointer to string
R1 = Terminating character

On Exit:

String at R0 is in upper case

Also from Paul is a quick tip for label printing, if you can't remember how to set up your printer properly, and your printout keeps coming out between two labels.

Firstly, print the label onto a piece of A4 loaded in the normal way, stick the address label over the area on the paper where the address appeared – obviously not using the label's own sticky, Paul says folded sellotape on the back of the backing works well – then simply put the paper back into the printer and print the page again.

Finally from Paul: 'What is the point of MessageTrans_CopyError? Could this be the Most Useless System Call?'

*QUIT

Last month we carried a utility called *MemUtils* by Andrew Bower. Andrew has supplied us with a slightly amended version which is now compatible with the PD *LineEditor* module. The January disc contains the update.

All offerings of all kinds are always welcome. Send them to *INFO, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP.

Name, address and program title on every disc please and include a text file containing same. An SAE will ensure your disc's return. Also include whatever instructions, diagrams, examples and screenshots you can. And feel free to be as technical or as plebby as you like.

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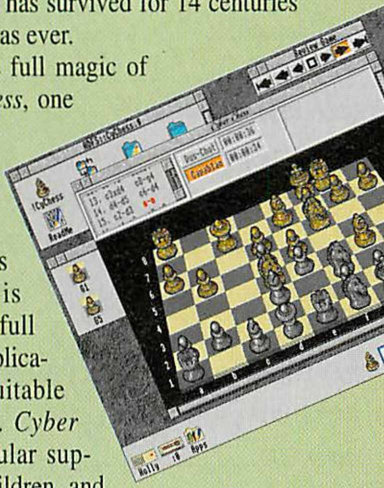
Cyber Chess

A complete game

Cyber Chess is another classic game from leading games company, Fourth Dimension. Chess is probably the most popular game in human history. It has survived for 14 centuries and is as successful today as ever.

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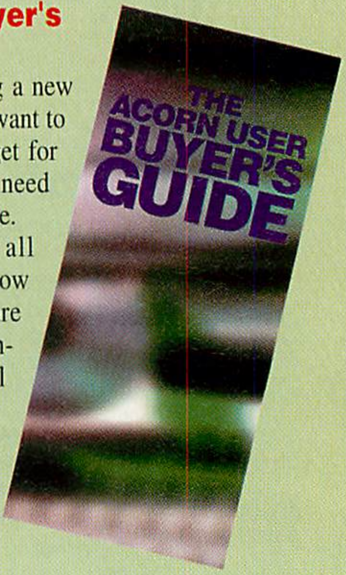
This great game has superb 3D simulation, is Risc OS compliant, has full implementation of all applicable chess laws and is suitable for high spec machines. *Cyber Chess* also offers particular support for beginners and children, and good support for stronger players.



The Acorn User Buyer's Guide Book

If you're thinking of buying a new or second-hand machine, or want to know the best packages to get for your computer, then you'll need the *Acorn User* Buyer's Guide.

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Here's more information on... *The Education disc*

The *Acorn User* Education disc has been updated by our education editor Geoff Preston to privide a wealth of education resources, many of which may be useful to other users.

A number of the files are resources to be used with commercial programs such as *Prime Solver* and *smArt*, which must of course be bought separately.

Included on the disc are:

Databases: two databases in comma-seperated value format, which most databases should be able to import.

One is a list of useful addresses of software houses and so on. The other is a database of dinosaurs.

NRA: these are a comprehensive set of templates in *Style* format to be used with National Records of Acheivement.

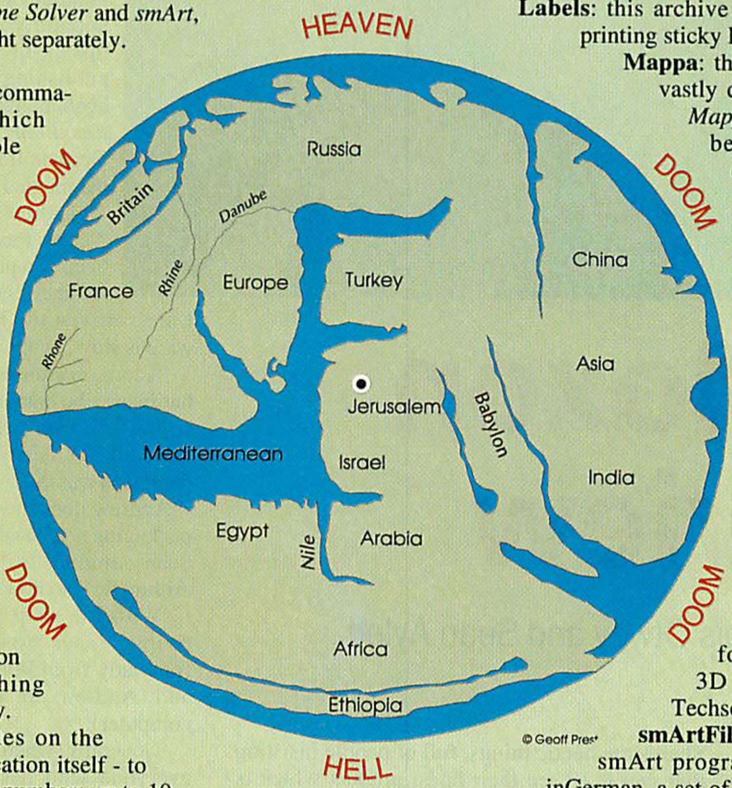
These have been revised and updated since the ones which appeared on the *Acorn User* cover in June.

AU fonts: two novelty fonts.

Gemini: the *Gemini* application by CSH enebles pair-matching games to be created very easily.

There are two *Gemini* files on the Education disc - not the appilcation itself - to help learn French and German numbers up to 10.

Journal: the *Draw* files in this archive will enable a pupil to keep a diary of their homework.



© Geoff Pres

Border files: a set of borders for use with the Impression family and Poster, in order to jazz up your documents.

Poem: two files for use with Techsoft's POEM embroidery machine.

Labels: this archive has three *Style* templates for printing sticky labels on A4 sheets.

Mappa: these are *Draw* files of maps in vastly differing styles, including one, *MappaMundi*, which is believed to be the first map of the world ever.

Cadbury: a set of clip art files inspired by a trip to Cadbury World, all to do with chocolate.

SpexExt: contains a number of objects for use with the program Spex from Aspex, which also serve as a demonstration of the high quality artwork produced with this program.

Windows: a brief description of how to use windows in Risc OS.

Perspectives: a series offiles for use with the *Perspectives* 3D CAD-related program from Techsoft.

smArtFile: to be used with 4-Mation's smArt program. There is a weather map inGerman, a set of guitar chord shapes - the 'pictures with the dots' - meals in French and German and a map of Europe.

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REGAN

The Moxon Interview

Andrew Reeves, Louis Otway and Sean Aylett

'There's nothing wrong with programming from your bedroom'

Shows are hectic things, full of people insisting that you *must* see their latest product which is going to *revolutionise* the Acorn market. By day three of the Acorn World show, the *Acorn User* team had learned to spot them coming and hide, but by this time one person had managed to leave not one but three business cards with me. Moreover, I was genuinely interested in his product and and made the time to go over to his stand to see it. This person was Louis Otway, from Fabis Computing.

Louis is actually the baby of the Fabis team; Fabis Computing is run by Andy and Sean. Up until recently, these two were Acorn Dealers and had written programs for other people, before bursting upon the scene with *Easy Font*. I caught up with them in their home, Sarford House in Swadlincote.

'Eighteen months ago, *Easy Font* was born,' says Sean. 'Some bloke came into the shop who'd got the *ArtWorks* fonts and 200 Skyfall fonts and wanted to use them all on his computer. We realised that it coudn't be done, and spied a bit of a gap in the market there. Andy had a bit of a tinker to see if it was possible.'

'After a few hours I realised that it could be done,' confirms Andy, 'and after a few months, *Easy Font* was born.'

EasyFont 1.00 first appeared over a year ago on 25 November at the Kegworth Open Day. (One year later, Sean did the same show with *EasyFont 3*.) '*EasyFont 3* was the one that we wanted to do first, but by releasing *EasyFont 1* we could get feedback as to what people wanted to see in there. Our users now have an application which they can feel that they have helped design.'

Apparently, Fabis Computing often gets phone calls which start 'Hello, is that *EasyFont*?' but it will not be a one-product company for long. A pack of fonts from ISV is on the way, as are a number of other 'top-secret' projects, hopefully ready for 6 May this year – this is in addition to the number of publishing companies which took a keen interest in *EasyFont 3* at the show. *EasyFont 3* is popular abroad, and a German translation of the software and the manual has just been completed.

Andrew and Sean are confirmed Acorn fans: 'The software's always been of a pretty high standard, compared to other platforms. On the PC, the software's driven the hardware. Because the software is slow, people buy a faster machine.

'Acorn machines have been driven by the hardware; the machines are as fast as they can be, so the software needs to be written to a high standard. With *EasyFont*, unless the rendering of the screen was instant, we weren't satisfied with it.'

Andrew does the programming, Sean does the packaging – at least, that was Fabis's story after Sean admitted to having trouble with one-bit arithmetic – so how did Louis join the team?

'With the shop we met a lot of interesting people,' says Andrew, with understatement (one lady from Portugal actually paid for Sean and Andrew to travel over to install her computer).

'Generally, when a new Acorn dealer opens up everyone who has an Acorn machine comes down to introduce themselves. "Hello, I've got an Acorn." It's that kind of market. Louis was one of the more interesting ones.' With Sean and Andrew writing the software, Fabis needed someone who could go out there and get it sold.

Fabis is a small company. Sarford House is Sean and Andrew's home, office and warehouse, a common arrangement among Acorn firms: 'If you look back at the roots of all the companies in the Acorn market, they all come down to bedrooms,' says Sean. 'There's nothing wrong with programming from your bedroom.

'Louis is an excellent salesman; basically he has no fear when talking to someone he doesn't know. At Harrogate we told him to go away and find people who were important; he came back with Charles Moir who runs CC.'

'I went to the CC stand and said that I wanted to speak to Charles,' Louis explains. 'The bloke asked if he could help if it was a technical matter, but I just kept asking until he went and fetched him.'

If Sean and Andrew continue to produce saleable products, and Louis continues to sell them to all and sundry, Fabis Computing should certainly make a name for themsleves and should be around in the Acorn market for a long time yet.

David Matthewman

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Studio24



This picture is original artwork produced using Studio24 by Walter Briggs of Kingfisher Graphics

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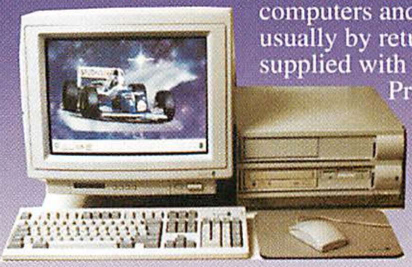


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